Aalto University
School of Business

USER RESEARCH IN PRODUCT DEVELOPMENT IN BUSINESS TO BUSINESS SOFTWARE AS A SERVICE

Master's Thesis
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Abstract

Customers are more empowered to make purchasing decisions than ever before, and customer experience has become a critical decision factor. Business to business (B2B) software as a service (SaaS) companies are changing their strategies and ways of working to become more customer-centric and stay competitive. To understand users, their needs, motivations and the problems that they are facing, companies do user research and involve users in product development.

This thesis explores how B2B SaaS organizations utilize user research when developing products. It aims to answer some of the most fundamental questions: which user research methods companies use, how they involve internal stakeholders in user research and how they select the users and motivate them to take part in product development. A qualitative multiple case study approach was used in this thesis to answer the research questions. The literature review aims to provide a broad overview of the topic. Six B2B SaaS companies and two service design companies were interviewed to learn about user research in B2B SaaS field.

The results of the thesis show that less customer-centric organizations do ad-hoc user research. More customer-centric companies incorporate user research into the development process. Both approaches are valuable for developing a product that fits customer needs but incorporated user involvement is necessary for achieving a better outcome. Customer-centric organizations include various stakeholders in user research to increase the transparency of findings and create empathy towards users. Furthermore, qualitative user research is essential for customer-centric product development. Regarding the users, while they are motivated to take part in product development, it was discovered that in the B2B field the process of approaching users can be challenging.

This thesis compares how different B2B SaaS companies do user research. It reveals the best practices, challenges and opportunities of user involvement. This information can be useful for organizations that aim to become customer-centric. The findings contribute to the literature by providing insights into successful examples and the challenges of user involvement in product development in B2B SaaS organizations.

Keywords user research, user involvement, user experience, customer experience, customer feedback, service design, design thinking, customer-centric product development

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Helsinki, 15.12.2019
Maria Yakovleva

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List of abbreviations

AI	Artificial intelligence
B2B	Business to business
B2C	Business to consumer
CRM	Customer relationship management
CX	Customer experience
KPI	Key performance indicator
ML	Machine learning
NPS	Net promoter score
ROI	Return on investment
R&D	Research and development
SaaS	Software as a service
UI	User interface
UX	User experience

List of main definitions

Customer experience - the entirety of the interactions a customer has with a company and its products. The overall experience reflects how the customer feels about the company and its offerings ("Customer experience," n.d.). User experience is a part of customer experience.

Customer feedback – information that is coming directly from customers about the satisfaction or dissatisfaction with a product or a service ("Customer feedback," n.d.)

Design thinking – a human-centric design methodology that combines end-user focus with multidisciplinary collaboration (design, social sciences, engineering and business) and iterative improvement to produce innovative products, systems and services (Plattner, Meinel & Weinberg, 2009, p. 14)

End-user (also user) – a person who uses the software or hardware after it has been fully developed, marketed and installed ("End User," n.d.). There is a difference between users and customers. Customer is paying for a system or a product but is not necessarily using it.

User research methods – particular procedures to accomplish or approach a certain goal. In service design, methods usually describe "how" certain tools such as interviews and prototypes are used in the projects (Stickdorn, Hormess, Lawrence & Schneider, 2018).

Product (software) development – an iterative logical process that aims to create a computer coded or programmed software to address a unique business or personal objective, goal or process ("Software Development," n.d.)

Service design – an approach to designing services that balances the needs of a customer with the needs of the business, aiming to create seamless and quality service experiences (Stickdorn et al., 2018)

User involvement – a concept in which users are involved in the process of product development (Iivari, Isomäki & Pekkola, 2010).

User research (also UX research and design research) – a systematic study of the goals, needs and capabilities of users to specify the design, construction, or involvement of tools to benefit how users work and live (Schumacher, 2009). User research focuses on understanding user behaviours, needs and motivations through observation techniques, task analysis and other feedback methodologies ("User Research Basics," 2013).

User experience (UX) design - the process used by design teams to create products that provide meaningful and relevant experiences to users ("User Experience (UX) Design," n.d.). UX design is a part of service design.

List of other definitions

Co-creation (co-design) – designers and people that are not trained in design working together in the design development process (Sanders & Stappers, 2008)

Continuous experimentation – finding out what customers want by arranging continuous customer experiments, getting direct customer feedback and observing usage behaviour (Fagerholm, Guinea, Mäenpää & Münch, 2014)

Human-centred design (and user-centred, human-centric design) – an approach to systems design and development that aims to make interactive systems more usable by applying human factors and usability knowledge and techniques (Giacomin, 2014).

Usability studies (usability testing) – a process of testing the easiness of using a design on a group of users by observing users as they attempt to complete tasks ("Usability Testing," n.d.). Usability testing is one of the methods of user research.

User engagement – a level of a customer's physical, cognitive and emotional presence in their relationship with a service organization (Brodie, Hollebeek, Jurić and Ilić, 2011, p. 5)

User participation - a special case of user involvement, in which users (or their representatives) are actively involved in the process of product development (Iivari et al., 2010).

1 Introduction

In this chapter, the background and motivation of the research are introduced. Research problem and research questions are defined. The scope of the research and its goal are explained and, finally, the research structure is presented.

1.1 Background and motivation

1.1.1 The value of customer experience

“Today, we live in a very different society. The way people are connected, the way people are empowered. You need to rethink fundamentally how you create value and how you design” (Service Design Network, 2018). Nowadays, customers are more empowered than ever before. They can no longer be forced to buy or use whatever exists and have more options to choose from. They can purchase products and services globally and can easily compare them (Stickdorn et al., 2018). In the software industry, business to consumer (B2C) companies are starting to provide an exceptional customer experience. People are getting used to products that look good, are easy to use and provide value. They are expecting business to business (B2B) products to create a similar experience. “You’ve got to start with the customer experience and work backwards to the technology” (Steve Jobs, 1997). Steve Jobs, a founder of Apple Inc., the company that creates one of the best customer experiences (CX), noticed a long time ago that it is not only about technology. Technology alone cannot meet customer needs (Clarke & Barr, 2018). Today, successful companies use customer experience as their starting point. To be competitive and to meet customer expectations, they focus on good customer experience and not only on functionality when developing their products (Johnston & Kong, 2011).

1.1.2 Customer centricity and competitive advantage

Rising customer expectations and high competition force companies to rethink how they do product development. To deliver a good experience, companies have to use much more empathy when creating products. It is necessary to decrease the gap between organizations and their customers for them to understand customers better (Kumar & Holloway, 2009). Service providers are placing customers and customer experience to the heart of the

organization and service offering (Zomerdijk & Voss, 2010). Furthermore, because of the need for creating human-centric products, design is becoming important and is not anymore the responsibility of designers only (Brown & Katz, 2011; Kolko, 2015). Design thinking and similar methodologies, such as service design, are used to solve the needs of the users. They promote user-centricity and integrate human, business and technical factors to identify and solve problems (Plattner, Meinel & Leifer, 2010).

Customer centricity allows companies to achieve competitive advantage and improve their financial performance (Shah, Rust, Parasuraman, Staelin & Day, 2006). According to the customer experience return on investment (ROI) study conducted by Watermark Consulting (2019), customer experience leaders in the United States outperform the market by having higher revenue and lower expenses. According to Temkin (2018), while bad customer experience costs money, good customer experience can result in more sales, more referrals and better financial performance. Moreover, according to Clarke and Barr (2018), there is a gap between customer experience and customer expectations in many industries, including the software and technology industries. While some of the highest gaps of 25% and more were noticed in the airline and healthcare industries, the software industry has a 14% gap. The gap represents the difference in what customers expect and what they are getting in reality. In many cases, customer expectations and experiences do not match. That creates an opportunity for companies to be more competitive by becoming customer-centric. Also, since some of the leading companies have already reached the final stages of customer-centricity, other organizations must make changes in their strategies and ways of working to survive in the market and be competitive.

1.1.3 User research as a part of service design

As previously mentioned, to create a better customer experience, companies need to become more customer-centric and place customers and design at the heart of an organization. Service design is a human-centric and collaborative approach used by companies to meet those needs and create better services. User research is an important part of service design (Stickdorn et al., 2018). This thesis explores how user research can be utilized by B2B SaaS organizations to understand users and their needs, design better services, provide a better user experience and gain a competitive advantage.

1.1.4 Reasons that led to the research

This thesis is written in collaboration with Aalto University and the case company, Sievo Oy. It is focused on B2B software as a service (SaaS) organizations. The reasons that lead to this research is the importance of user research and the potential value of user involvement in B2B SaaS organizations.

As mentioned, there is currently a gap between what customers expect and what companies offer. Many organizations are recognizing a need to become customer-centric, yet, only a minority of companies have already reached the final stages of user experience (UX) or CX maturity (Temkin, 2018). Since not many companies can be considered customer-centric, little publicly available information is available on how B2B SaaS organizations involve users in product development. Most of the literature is either focused on B2C organizations or user feedback and user involvement in various other industries, rather than SaaS, such as other types of software and information technology solutions (Fagerholm, Guinea, Mäenpää & Münch, 2017; Fabijan, Olsson & Bosch, 2015; Bosch-Sijtsema & Bosch, 2015). Service design literature is providing a set of best practices that can be applied to the development of different products and services but often focuses on B2C companies (Stickdorn et al., 2018).

With more information on successful examples and challenges of user research in B2B SaaS organizations, it would be easier for organizations to set goals, avoid common mistakes and focus on the most important issues. Therefore, this thesis brings insights about the maturity level of user involvement, current challenges, successful examples and opportunities of user involvement in the B2B SaaS field. To B2B SaaS companies, it provides a comparison of user involvement across different organizations. Another goal of the study is to evaluate the importance of the customer-centric approach and encourage B2B SaaS organizations to involve users in product development.

1.2 Sievo

The topic of the thesis was developed in cooperation with the main case company Sievo. Sievo is a Finnish procurement analytics B2B SaaS company founded in 2003. It is offering several solutions, which include Spend Analysis, Savings Lifecycle, Contract Management, Spend Forecasting and Benchmarking. Sievo helps the procurement and finance organizations of its customers understand their spending, cut down the costs and improve

the bottom line. The company has more than 150 employees located in Helsinki and Chicago. Sievo's customers are large and mid-sized organizations that are spread all around the world and are operating in a wide variety of industries ranging from food production to telecom.

1.3 Research problem and research questions

By establishing user engagement tools, making the research more systematic and well-organized, development teams and service designers in B2B SaaS companies can get user input that can be valuable for product development. The goal of the study is to find out how B2B SaaS companies can utilize user research in product development and determine methods and approaches suitable for the B2B SaaS field. Another goal is to understand who should be involved in user research and how to select and motivate users to take part in the research. Thus, the problem statement is:

How can B2B SaaS companies utilize user research in product development?

Based on the most recurring topics in the literature, as well as some of the most challenging areas identified by the case companies, it was decided to divide the main problem statement into three parts in order to study the process of user research from three different angles. The purpose of the first question is to understand which user research methods B2B companies can use and how to use them to get the most valuable insights. The second question is exploring who should take part in the user research in B2B SaaS organizations in order to make user involvement beneficial for the company. The third question is exploring approaches that B2B SaaS companies can use to select users and motivate them to take part in user research. The problem statement can be, therefore, divided into the following research questions (RQ):

RQ1: Which user research methods can B2B SaaS companies use to get valuable insights?

RQ2: Who should take part in user research in B2B SaaS companies?

RQ3: How can B2B SaaS companies select users for user research?

1.4 Research scope, terminology and structure

This section defines the scope of the research, the meaning of the main terminology and the structure of the thesis. The definition of user research is explained in more detail in the literature review. Context of B2B SaaS companies is described in the methodology section.

Since little literature is available about user research in product development in the B2B SaaS field, the literature review is exploring how user research is done in the B2C software and information systems industries in addition to B2B SaaS companies. The literature review gives a broad overview of methods used in user research, the participation of stakeholders and the selection of users. The case company research is conducted in six B2B SaaS companies and two service design companies. User research in product development is mainly investigated from the point of view of UX, service and product designers, who are often organizing user research. The case company research explores the topic of user involvement in more detail. It aims to create an understanding of the challenges, successful examples, goals and opportunities of user involvement in B2B SaaS companies and answer the main research questions.

Furthermore, while customers are paying for the system or product, they are not necessarily using it. Thus, the research is focused on people who are using the product and their user experience. They are referred to as users. Since UX can be defined as a narrower term of customer experience (CX), CX term is sometimes used in the thesis to explain broader concepts. UX is, however, the primary term that is used in the study. In this thesis, product development refers to all phases of product creation. The service design methodology is one of the approaches to product development that also refers to all phases of product creation. In addition, software as a service (SaaS) is the main focus area of the thesis. SaaS is sometimes referred to as product rather than service.

To address the research questions, the thesis is structured as follows. In the literature review, relevant areas of the existing literature are discussed. The areas include user research methods, the involvement of stakeholders, selection of users and other areas that are relevant to the research. In the research methodology section, the methods of case selection, data collection and analysis as well as the context of the study and case company descriptions are presented. Findings are structured in a similar way as the literature review, providing company comparison based on the main topics of user research methods, the involvement of stakeholders and the selection of users. The discussion chapter compares the main empirical findings with the literature. In conclusion, answers to the research questions,

theoretical contribution and managerial implications are provided. Limitations and suggestions for future research are discussed.

2 Literature review

The literature review motivates the relevance of the topic and discusses the most prominent and partially conflicting user research theories. First, the opinions of authors on the importance of user involvement are presented. Then, user research and service design processes and UX maturity are explained. Finally, literature related to the main research questions is reviewed, and the summary of theoretical findings is presented.

2.1 Importance of user involvement

Many authors have been researching the role of collaboration with customers and users in information system success. In the context of user involvement, system success is often measured by user satisfaction and acceptance (Gruner & Homburg, 2000; Bano & Zowghi, 2015). This section presents different opinions about the importance of user research and its role in product development and system success.

2.1.1 User involvement and its value

The main goal of user research is to deeply understand users, their needs, motivations, ways of working and problems that they are facing (Bosch-Sijtsema & Bosch, 2015; Olsson & Bosch, 2014; Giacomin, 2014). Information gathered in user research can be utilized for developing new products as well as improving and enhancing existing products. Empathy towards user needs can help developing features that provide value for the users (Kujala & Väänänen-Vainio-Mattila, 2009), solving relevant problems and "developing the right software" (Fagerholm et al., 2017, p. 293). By doing user research, companies can avoid wasting effort, time and money on developing a product that does not solve a problem that the user is facing (Lindgren & Münch, 2016). Therefore, in-depth knowledge of customers and users can help organizations develop the product that provides value and good user experience by focusing on the right issues.

Product development process is often generating many assumptions. Development teams that do not have suitable data to help them answer their questions have to rely on assumptions, guesses and opinions of team members. In contrast, organizations that gather customer feedback and information about the users can improve the process of making decisions by collecting data that guides product development and enables data-driven decision-making (Fabijan et al., 2015). The data-driven approach may improve the accuracy of decisions and product investments (Sauvola et al., 2015). Data related to user needs and pain points may make it easier to identify user requirements (Kujala, 2003). That can solve the problem of uncertainty which is typical for product development.

User research can help development teams move beyond assumptions and validate ideas with the users, who may have a completely different point of view (Stickdorn et al., 2018). By validating the thoughts and the issues that may have a significant impact, the development team may reduce the risks associated with the product that they are developing (Rissanen & Münch, 2015). Apart from decreasing the risk, development teams may also improve the process of product development. In particular, development teams, that are using data-driven approaches and are relying on customer data when making decisions, have better levels of motivation and leadership and notice the increase in product development quality (Gruner & Homburg, 2000). Co-design can also improve creativity and in the end, benefit the project, users and organization (Steen, Manschot & De Koning, 2011; Magnusson, Matthing & Kristensson, 2003).

User involvement may require a significant investment. However, if implemented well, user involvement may result in increased sales (Kujala, Kauppinen, Lehtola, & Kojo, 2005), increased user productivity (Iivari & Iivari, 2006) and many other benefits that can justify the cost and effort. On the other hand, it can be complicated to calculate return on investment (ROI) related to user research. Costs of UX work and user involvement can be seen immediately, but benefits may appear much later in the lifecycle of the software (Kuusinen & Väänänen-Vainio-Mattila, 2012). Even though the results may be appearing later than costs, the authors suggest considering user involvement and improvement of UX an investment into better solutions rather than a major cost. Gruner and Homburg (2000) and Bosch-Sijtsema and Bosch (2015), write about the financial benefits of user involvement that can result in revenue growth and maximized ROI. Bias and Mayhew (2005) are writing about the ROI of improved usability, which is also an outcome of user research and user involvement. The author mentions that multiple factors can drive the ROI of improved

usability of a product. Those factors are savings resulted from making changes early in the development process, an increase in user productivity and an increase in product sales. One more factor is the improved perception of the value of the product and the company itself.

To sum up, according to Figure 1, user involvement may lead to user satisfaction (Kujala, 2003, p. 12). Early user involvement may result in a better product development performance, which may refer to saved time, decreased effort and cost of the development process, as well as increased speed of learning and improved motivation and leadership in the development team. Another consequence of early user involvement is the improvement of the accuracy of product requirements and, therefore, usability and fit to the needs of the users. A deep understanding of users, ability to move beyond assumptions and make decisions based on data gathered during user research may improve the decision-making process and help companies focus on the creation of products that bring value to their customers and users. As a result of those two consequences of user involvement, overall system quality and customer satisfaction can be improved. User and customer satisfaction may lead to better competitive advantage and financial benefits such as maximized return on investment and revenue growth.

Figure 1. The effects of early user involvement (Kujala, 2003, p. 12)

2.1.2 User involvement does not always result in system success

User involvement does not always result in system success. The success of a system strongly depends on the way user involvement is arranged. If user involvement is not managed well, it can result in a negative attitude towards a new system, problems in communication and cooperation between users and developers as well as disagreements and conflicts related to

product development (Bano & Zowghi, 2015). It is, however, challenging to determine how successful the outcome of user involvement is.

User involvement does not automatically make projects successful. Even though customer-centric organizations can outperform others by providing better value for customers and increasing their satisfaction, they may have higher coordination costs because of additional communication with all stakeholders and users (Lee, Sridhar, Henderson & Palmatier, 2014). To achieve a system success, they need to ensure that the external benefits of being customer-centric exceed additional costs.

It can be argued that user involvement does not guarantee system success and is not the only factor that determines the satisfaction and acceptance of the system by the users. Yet, even though many other factors affect the success of the system, user involvement can significantly increase the chances of user satisfaction. As Goodman, Kuniavsky and Moed (2012) said, user experience is not a guarantee of product success. On the other hand, bad user experience can often lead to failure. Therefore, good user experience created by involving users in product development is a necessary element of success.

2.1.3 Measuring system success

It is not easy to measure system success. User satisfaction is often used as an alternative measure since it is easier to identify a degree of satisfaction than a degree of success.

Howcroft and Wilson (2003) agree that it is difficult to measure whether user involvement has any impact on system success. It is also difficult to estimate whether the impact is positive or negative. On the other hand, Goodman et al. (2012) suggest that it is important to measure the results of user research to communicate the effectiveness of this approach to the stakeholders, show the value of customer-centric product development, set clear goals and see if they are achieved. Even if stakeholders are convinced that user research is valuable, they need to see how much change has occurred because of user involvement. Sheppard, Sarrazin, Kouyoumjian and Dore (2018) agree that it is as essential to measure design as it is to measure revenue and costs. They, however, disagree that it is difficult to measure design. Nowadays, design metrics, such as user satisfaction and usability measurements can be easily used in online tools. All in all, even though it might hard to measure system success and design, it is as essential to measure it as other key performance indicators (KPI) such as sales and financial targets.

2.2 User research in service design and in an organization

2.2.1 Service design process

"Make sure you are solving the right problem before solving the problem right" is one of the main ideas of service design (Stickdorn et al., 2018, p. 86). User research is an important part of the design process, and it can be done on all phases of service design and product development. Since different phases have a different purpose and outcome, user research methods and approaches vary across phases. A Double Diamond framework (Figure 2) is used in this thesis to define the phases of a design process. The first diamond represents the process of discovering problems that users have, understanding their needs and thinking about new services and features that would make a product successful. The discovery phase continues with defining a key issue that has to be solved.

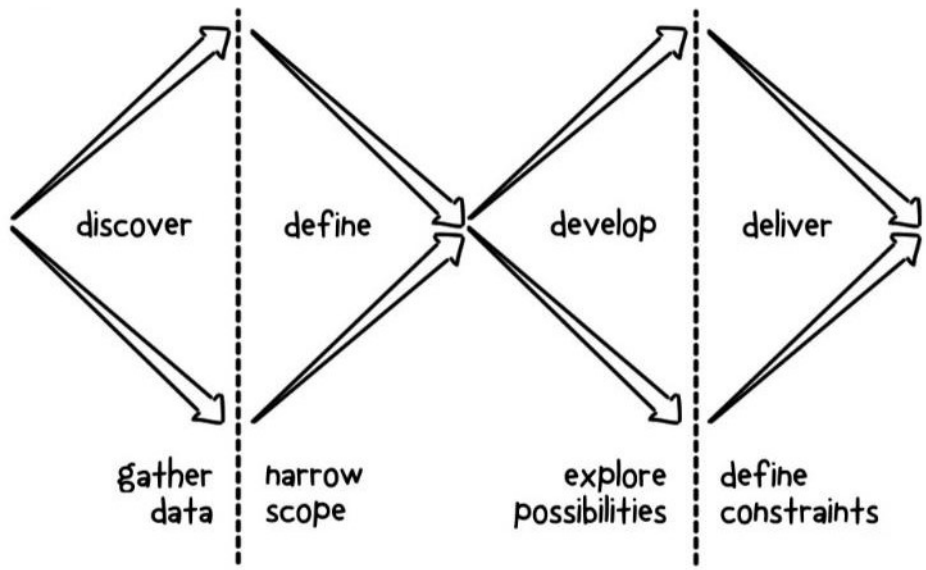

Figure 2. Double Diamond design process (Digital Transformation Agency, 2019)

After a problem has been defined, ideation and development of ideas that could solve the problem take place. At the last stage of the process, the most suitable solution is selected and delivered. The first diamond represents the process of discovering the problem and the second diamond refers to the process of solving the problem. Moreover, user-centred design can be used for both, interpreting user needs in order to design software and validating and improving already designed software by observing the users (Plattner et al., 2010).

Even though the design process shown in Figure 2 looks straightforward, in reality, the process is complex. As it is shown in Figure 3 (p. 11), the first phases of service design,

called fuzzy front end, can be most uncertain and may generate many assumptions and questions. Later, when the main problem and possible solutions are identified, the process becomes more focused on a certain solution but may still have assumptions and issues that have to be clarified. Figure 3 shows the feeling of the journey that starts with uncertainty and ends with a "single point of focus" (Newman, 2002).

Figure 3. Design process (Newman, 2002)

Furthermore, as Stickdorn et al. (2018, p. 18) mentioned in their book about service design, such terms as human-centred design, design thinking, holistic UX and others may have differences. However, they all share similar principles and the same goal of creating experiences that "meet the needs of the business, the users and other stakeholders". Service design term is used in this thesis to describe a human-centric approach to product development. Furthermore, a term user research is used to refer to a set of methodologies and interactions with the users that take place on various phases of service design and product development for understanding users and their needs with the aim of improving products and services. Such methodologies include qualitative methods such as user interviews, observations and usability tests or quantitative methods such as surveys, A/B testing and product usage analytics. Any interactions with the users and the collection of data associated with the users are referred to as user research. Other synonyms used in this thesis are user involvement, user feedback, user participation and user engagement.

2.2.2 User research process

User research or service design research can be presented in the form of a design process (Figure 4, p. 12). It starts with defining research scope and questions and preliminary

planning and then continues with data collection. Data collection and processing of data is often a time-consuming process. In data collection, many different methods and approaches can be used depending on the research question, the goal of the research and many other factors. Data visualization approach also depends on the issues that have to be solved and on stakeholders that will be using the results. The ultimate goal of user research is to get insights that are useful for product development (Stickdorn et al., 2018).

In this thesis, one of the main topics is data collection and the methods and approaches that are used to collect data. The process of user selection also applies to data collection. In addition, processing of the data and sharing it with the rest of the organization is briefly discussed. Another focus is on the role of stakeholders, which applies to the whole process of user research.

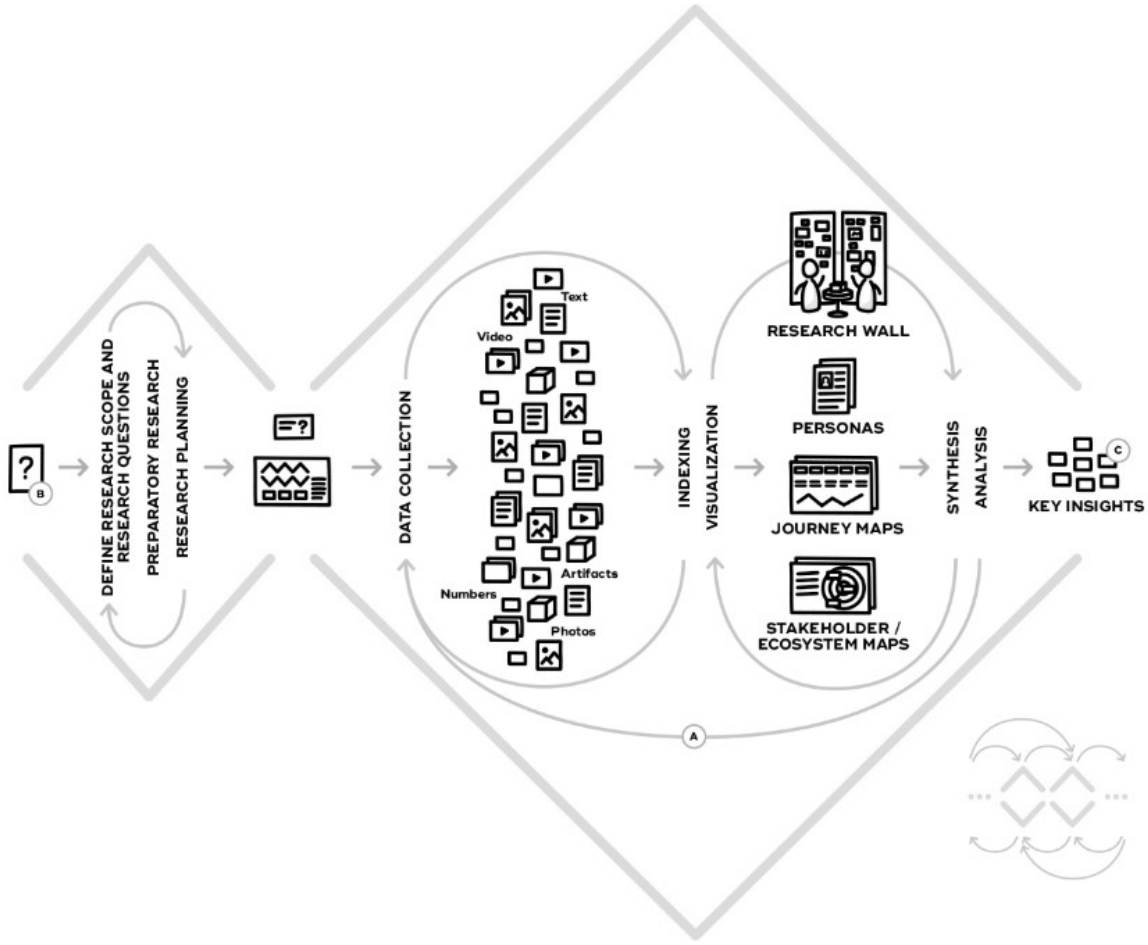

Figure 4. User research process (Stickdorn et al., 2018, p. 108)

2.2.3 Maturity of user experience

This section explains the meaning of user experience (UX) maturity and some of the main factors by which companies can be classified into different levels of maturity. It is important to understand the level of UX maturity in various organizations because UX maturity may affect how the user research process is organized. User experience term is used instead of customer experience because it is more relevant to the topic of user research.

In this thesis, a framework created by Forrester Research is used to compare the UX maturity of the companies (Figure 5). The framework is called experience-based differentiation and is based on the principles of engaging everybody in delivering good customer experience and focusing on customer needs (Temkin, 2008, p. 3). Since it is difficult to assign organizations that are introduced in this thesis to exact stages of maturity, companies are referred to as customer-centric or mature and less customer-centric or less mature. More customer-centric organizations belong to the last two stages, in which customer experience is either engaged or embedded (Figure 5). That means that UX is either a core part of the strategy of an organization or an integrated part that is not discussed separately. In practice, that means that mature organizations use customer insights in every aspect of the business, have a customer-centric culture and the role of the management is to maintain the customer-centric culture.

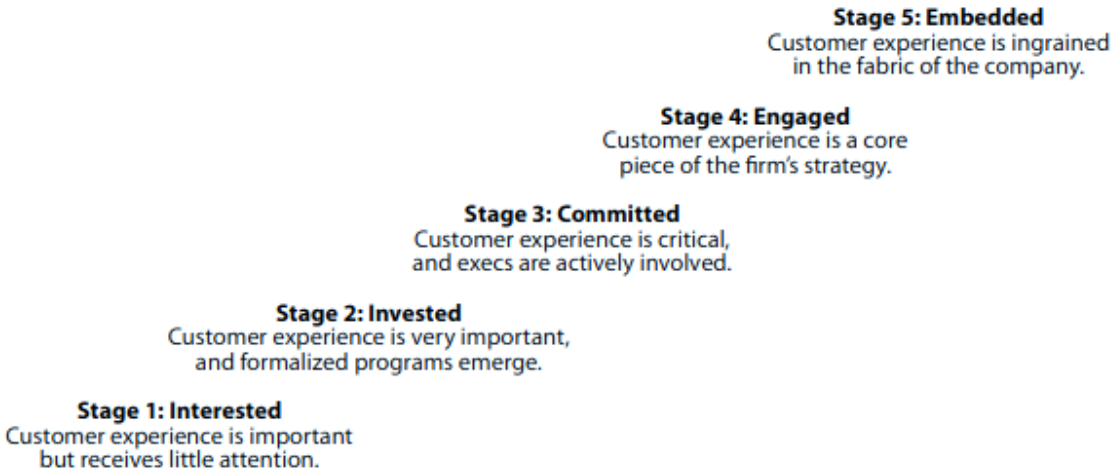

Figure 5. Stages of experience-based differentiation (Temkin, 2008, p. 9)

Less mature organizations belong to the other three stages: interested, invested or committed. Organizations have recognized the importance of customer experience and are aiming to

integrate it into the organization. Before they can reach the final stages of customer experience, they are usually going through the stages, in which customer experience is becoming more and more important. They are making investments in UX, creating formalized processes that would support the improvement of customer experience and taking an active effort of transforming the company towards a customer-centric organization (Temkin, 2008).

Many other user experience and customer experience models exist. Goodman et al. (2012) use a similar idea of UX maturity, in which at the lowest level, a need for better UX is not recognized and at the highest level customer-centric design is embedded in development strategy. Shah et al. (2006) agree with other authors by writing that a truly customer-centric organization has all its functional activities aligned to deliver value to customers and all their actions begin from customers and their value.

2.3 User research methods

This section introduces approaches to selecting user research methods and involving users in product development. It aims to find theoretical answers for the first research question: "Which user research methods can companies use to get valuable insights?" The section starts with a description of the current situation in various software companies. After that, it explains why doing research continuously and combining different methods is necessary and which methods are more suitable for which stages of product development.

According to several authors including Bosch-Sijtsema and Bosch (2015), Sauvola et al. (2015) and Maalej, Happel and Rashid (2009), methods used for collecting user data and involving users in the development process in many organizations, especially in the B2B field, can be considered ad-hoc. User research is often implemented on some of the design and development phases (Bosch-Sijtsema & Bosch, 2015) rather than continuously. As an example, user data can be collected only in the later phases (Gruner & Homburg, 2000) or only after the product has been deployed (Olsson & Bosch, 2014). Companies might occasionally do A/B testing to compare two versions of software or use only one or two most familiar methods (Rohrer, 2014). This not only hints on the lack of continuous and systematic approaches in the organizations but the lack of user research in general.

On the other hand, the lack of user research is not an issue in all organizations, especially in the B2C field. For example, Google is relying a lot on user testing. They are

evaluating each change that can have an impact on user experience (Lindgren & Münch, 2016). One of their main principles is: "Focus on the users and all else will follow" (Google, n.d.). Similarly, Microsoft and eBay have recognized the value of user involvement and established an environment that is facilitating continuous experimentation and other customer testing opportunities as well as customer interviews and focus group research.

2.3.1 Continuous user research

Involving users early

Travis and Hodgson (2019) mention that "discover" and "define" phases of product development (Figure 2, p. 10) are important for creating a good user experience. According to their knowledge, development teams tend to take a shortcut and go straight to "develop" and "deliver" phases. Thus, they do not spend enough time to understand user needs.

At the same time, Bias and Mayhew (2005, p. 17) claim that 10% of the design process can determine 90% of product cost and performance (Figure 6). "Discover" and "define" phases usually have many design alternatives. During those phases of product development, key decisions are made, and it is important to ensure that the product fits the needs of the users. According to this, it is important to start research early and involve users in the design process from the beginning, already during "discover" and "define" phases.

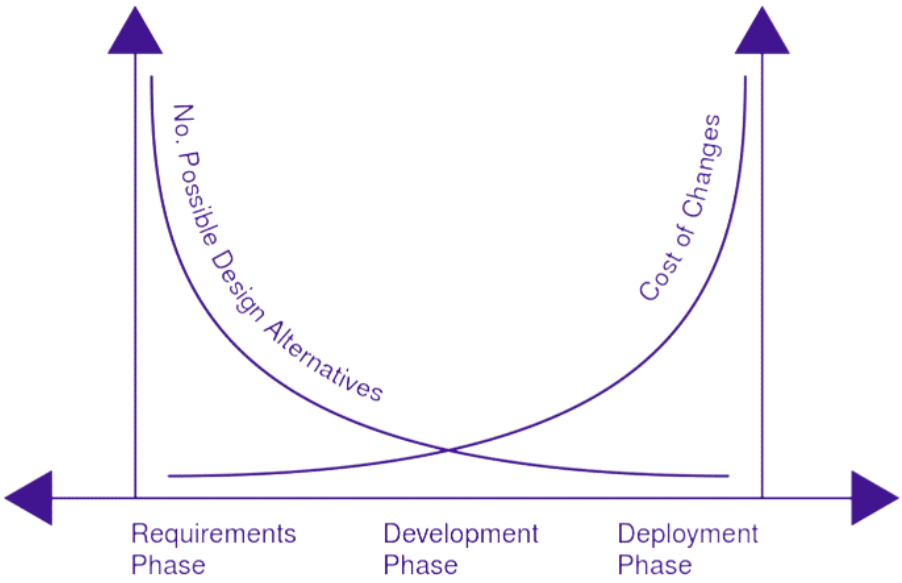

Figure 6. Cost of change (Bias and Mayhew, 2005, p. 23)

When the product or a feature is already developed and deployed, the cost of change becomes higher than at the beginning of the project, as it is shown in Figure 6. Therefore, the best practice of user research process and methods is to involve the users and other stakeholders in the service design process and product development already from the beginning, before moving to the development phase, as this phase has the lowest cost of change and the largest number of alternatives. It is important to select the best alternative and make all possible changes early enough before it becomes expensive (Bosch-Sijtsema & Bosch, 2015; Kujala, 2003).

Continuous user input

Several authors are writing about the importance of continuous input throughout the whole product development process (Lindgren & Münch, 2016; Olsson & Bosch, 2015). Even though early phases might have the largest number of alternatives and assumptions, other phases generate various assumptions as well. Stickwork et al. (2018) suggest using research on all phases of service design and product development to inform decisions. The phases range from predevelopment phases such as “discovering” and “defining” the problem and end with the post-deployment phase when the product or a feature is already delivered but can be still monitored. In all phases, it is better to make decisions based on real data and insights rather than based on assumptions because assumptions can be wrong or biased.

On the other hand, there is no common agreement about the importance of user involvement in different phases (Iivari et al., 2010). Bano and Zowghi (2015) claim that user involvement may be most effective in the initial stages of product development. Gruner and Homburg (2000) concluded in their study that interaction with users is especially important in initial and the last phases of product development. According to them, the engineering phase does not require much user interaction. Users are generally not technically advanced. Thus, they cannot give any technical suggestions on the development phase itself. The most important phases for customer interaction are idea generation, product concept development and prototype testing. Gruner and Homburg (2000) note that information provided by a customer may be more valuable in such concrete phases as prototype testing and concept development since customers can provide more precise and detailed information.

Furthermore, each user research method has its purpose and fits best to a certain phase of the development process (Travis & Hodgson, 2019) or a certain aim of user research. Bosch-Sijtsema and Bosch (2015) created a framework that shows which methods can be

used in various phases of development (Figure 7). The methods can be divided into quantitative and qualitative, informed and uninformed as well as by the size of data that can be gathered and by the type of user involvement. Figure 7 provides an overview of existing approaches, their characteristics and suitable timing. It is important to note that due to the variety of available user research methods, user research can be conducted during the whole product lifecycle to meet various objectives. For example, user dialogues can be suitable for initial stages of product development for collecting a small size of in-depth data. A/B tests can be more suitable for the later stages, and they can gather a large amount of data. Continuous user input can increase the speed of product development, decrease its cost and improve user satisfaction (Bosch-Sijtsema & Bosch, 2015, p. 806). Furthermore, it is emphasized that in addition to being continuous, user research should also be frequent and lightweight (Steen et al.,2011). It is important to get results often rather than plan the research carefully (Lindgren & Münch, 2016).

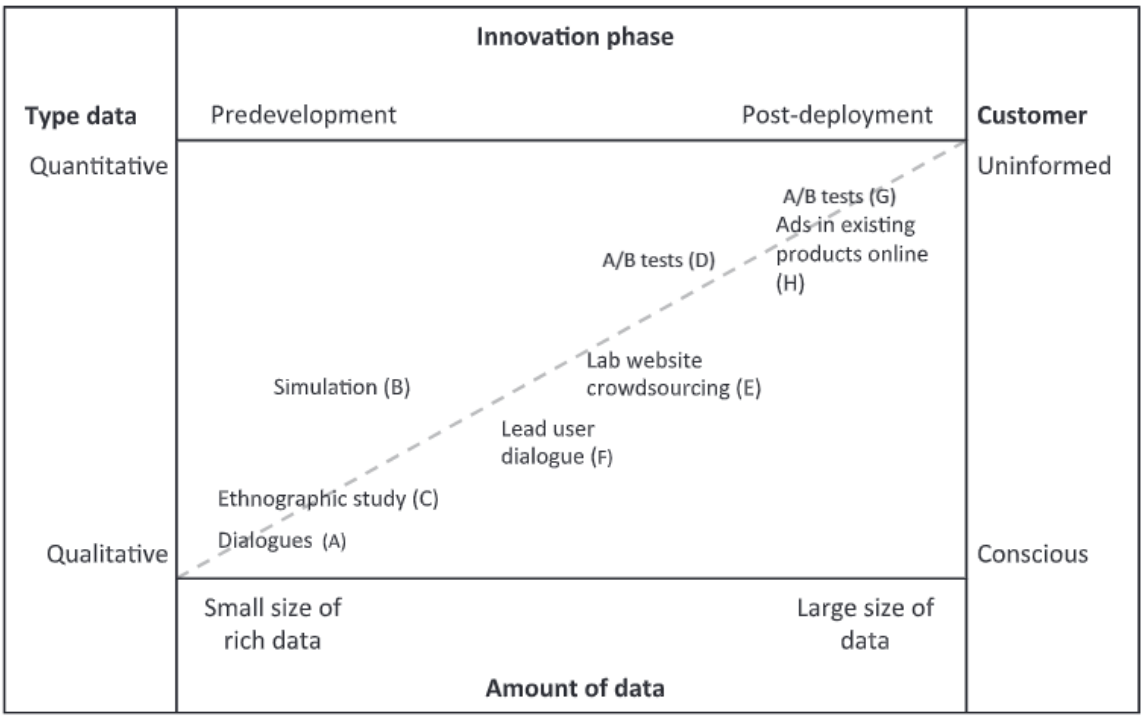

Figure 7. The framework of a user data-driven innovation system (Bosch-Sijtsema & Bosch, 2015, p. 804)

To sum up, while it is essential to do continuous user research, it might be important to collect data on certain stages such as idea generation, concept development, prototype testing, in which users can give more accurate feedback. Depending on the research objective, some methods can be more suitable for certain stages of a development process.

2.3.2 Combining different methods

Since each method has its own biases, some authors suggest using a mix of user research methods (Stickdorn et al., 2018; Rohrer, 2014; Olsson & Bosch, 2015). Biases can occur when people are behaving in a different way when they are observed, provide more positive answers during the interview and do not give accurate feedback when answering surveys. The accuracy can be improved by combining data from different methods. Keil and Carmel (1995) discovered in their study of customer and developer link that successful projects usually have many links between customers and developers. However, there is a limit, after which no further benefit can be achieved. A good practice is to do more user research (Rissanen & Münch, 2015) rather than less and use multiple user research methods. In addition, Verma et al. (2012) suggest not only focusing on user research methods but also on collecting all customer information from customer interactions with the system and the company to understand customer experiences better. In this section, a combination of conscious, uniformed, qualitative and quantitative methods is explored.

Uninformed and conscious methods

Data about both user behaviours and perceptions can improve the validity of user research. According to Lindgren and Münch (2016, p. 4), there is a gap between what customers are doing and what they think or say they are doing. Therefore, even though interviewing customers and users or asking them to fill in a survey, can provide valuable, this information may not be reliable. It is necessary to validate what users say by observing what they are doing and how. Figure 7 (p. 17) divides such methods to uninformed and conscious. Uninformed methods such as A/B tests or various tracking methods that identify what users are doing in the software and are capturing behaviour data. Conscious methods, such as user observations, can also gather information on user behaviour. Rohrer (2014) states that in the field studies, it is more useful to gather behavioural data by observing what customers do rather than asking questions. Since interviews can capture user behaviour and user needs only partly, they have to be complemented with indirect observations and other types of qualitative data, which can uncover hidden needs (Olsson & Bosch, 2015). On the other hand, if a new product or a new feature is being developed, it is sometimes impossible to gather behavioural data in the early phases of development. In these cases, development teams rely on user perception data until they can start testing prototypes. All in all, it was concluded by multiple authors that the words and behaviour of the users may not match

(Kabbedijk, Brinkkemper, Jansen & van der Veldt, 2009; Rohrer, 2014; Bosch-Sijtsema & Bosch, 2015). Therefore, it is a good practice to gather two types of data, based on user behaviours and perceptions or uninformed and conscious user involvement.

Qualitative and quantitative research methods

Furthermore, several authors suggest combining qualitative and quantitative research methods. The methods serve different roles. Qualitative methods can clarify complex questions and can be used to explore new ideas (Lindgren & Münch, 2016). They can help to understand the "human side" of an issue and solve complex problems (Fabijan et al., 2015). Qualitative data answers the question "why?" and "how?" instead of "how many?" and "how much?". This kind of data can provide more actionable insights than quantitative data. It can be argued that qualitative data is valuable for understanding the issue more deeply and getting detailed contextual descriptions.

On the other hand, qualitative methods have several disadvantages. They require the active participation of stakeholders and can be time-consuming. Qualitative methods usually generate a small amount of data in comparison to quantitative research (Olsson & Bosch, 2015). In addition, such methods as field studies or customer observations and interviews, are considered to have good potential but are hard to analyse and involve a lot of manual work (Kujala, 2008). Then again, direct contact with the customer that includes customer visits, observations, workshops and other types of studies at the beginning of the project may positively affect the success of a product (Kujala et al., 2005). Therefore, it is not always clear if active and face-to-face participation is a cost of time and effort or an investment to the success of a product.

Quantitative methods also have disadvantages. They collect large sizes of data that capture past events. This kind of data is not always actionable because it only answers the questions "how many?" and "how much?" and does not provide in-depth explanations. On the other hand, quantitative data can help focus on the right issues because it gathers a large amount of data in a relatively short time. Furthermore, In the B2B environment, product usage data collection is not common. Apart from the lower number of users, B2B companies may have strict regulations of data protection (Sauvola et al., 2015) and high consequences of misusing customer data or disclosing it to third-party service providers.

Many authors including Olsson and Bosch (2015) agree that qualitative research is more suitable for earlier phases of the design process such as "discover" and "define" phases

for getting a more in-depth clarification of new ideas. They suggest using quantitative methods in later phases of development (Fabijan et al., 2015). Quantitative data can confirm various hypotheses, help to define problem areas and evaluate solutions. In contrast, Rohrer (2014) suggests using both qualitative and quantitative methods in the early phases of a design process and using qualitative data during the delivery phase to inform and optimize the design. At the beginning of the project, quantitative data can help to identify the most problematic areas that can be explored by qualitative research. This is another option that also depends on the availability of quantitative data at the beginning of the project. Stickdorn et al. (2018) are admitting that both qualitative and quantitative research are useful and can be utilized in different phases in various forms. The right method can be selected based on the hypothesis that has to be validated as well as the purpose of the research (Lindgren & Münch, 2016). Especially when developing existing products, it can be beneficial to use quantitative data also in the early phases of development, when searching for new ideas.

2.4 Who should take part in user research?

This section starts with describing the gap between customer needs and decisions made in product development. It then explains who does user research, who should be involved and what challenges less mature companies are facing. The section aims to provide theoretical answers to the second research question: “Who should take part in user research?”

There is a weak link between data gathered about customers and users and decisions that are made during product development in many organizations (Kabbedijk et al., 2009; Fabijan et al., 2015). This is especially related to the selection of features and prioritization of customer requirements. Development teams may choose features based on opinions and experiences of internal stakeholders, especially senior managers, rather than based on user data (Olsson & Bosch, 2014). In many cases, it leads to a non-optimal prioritization process and the creation of features that are not used by users or do not meet their expectations (Olsson & Bosch, 2015). Due to several other constraints, such as the lack of context and details in user input, it is common for organizations to have a gap in communication between users and engineers (Maalej et al., 2009). As a result, decisions are made based on the opinions of product management (Olsson & Bosch, 2015). This, however, depends on the UX maturity of an organization and its customer-centricity. Customer-centric organizations aim to improve the communication between users and development teams.

2.4.1 Who does user research?

Depending on organizational structure, user research and interactions with users during product development can be implemented by different people that are usually a part of a development team. Some authors claim that the main customer contact is usually a product owner or a project manager (Olsson & Bosch, 2015; Kujala et al., 2005). In other organizations, the UX team or service designers are the main people responsible for researching user needs and motivations. In addition, several other stakeholders may interact with users. Sales and marketing organizations may be collecting information about customer needs and implementing various user studies and market research. Customer managers and customer support are can be the main contacts of existing customers and users. They are usually involved in solving customer problems and requests. Since mentioned stakeholders belong to a customer-facing organization, they may be collecting customer feedback and doing user research (Sauvola et al., 2015).

2.4.2 Involving stakeholders to user research

Even though one person or a small group of people, such as UX team or product managers, are usually responsible for the overall results of user research, other stakeholders can be involved in this process to have a bigger audience who can utilize the results. Some authors suggest including different stakeholders from various backgrounds and teams such as business, development and product management to user research activities (Lindgren & Münch, 2016) and making customer-centric design everyone's responsibility (Sheppard et al., 2018). The members of development teams and other organizations can be involved in user research. Furthermore, it is not only about testing ready solutions but also about getting ideas on how to create and improve the solutions. It is necessary for the team that is developing the solution to be involved in user research already before the solution is created or improved. The best practice is to include different stakeholders to the user research process from the beginning – discovery phase and keep them informed throughout the whole service design and product development process (Kuusinen & Väänänen-Vainio-Mattila, 2012; Gothelf, 2013; Sohaib & Khan, 2010).

Why do various stakeholders need to take part in user research? Stickdorn et al. (2018, p. 280) are explaining the main purpose as "seeing is believing". The only way to ensure that everybody in the development team and other teams are on the same page, they

understand users, their needs and can build suitable solutions, they should be involved in the user research. Goodman et al. (2012) point out that the most powerful way of communicating user needs and struggles to stakeholders is making them observe users themselves. This also might be the only way for them to understand that users do not think and act in the same way as stakeholders expect them to act and their assumptions can be incorrect. According to Gothelf (2013), a better potential that study findings will be supported can be achieved by involving as many stakeholders as early as possible to the user research process.

Gothelf (2013) also mentions the importance of involving stakeholders continuously and on all phases of the development process. This may result in a better understanding of the users by all relevant stakeholders, such as product managers and developers. If they can see or hear the feedback of the users instead of reading the results or hearing user research summary, it might be easier for them to believe in what was discovered. Kuusinen and Väänänen-Vainio-Mattila (2012) agree that the collaboration of stakeholders is good for obtaining a clear understanding of an overall situation as well as notice the needs of users early enough in the development process. Furthermore, Sohaib and Khan (2010) state that the collaboration of stakeholders such as developers, product managers, designers and others can maximize team efficiency. If everyone in the organization has the same goal and understanding of what has to be achieved, it may be easier to achieve the goals. Finally, not everyone can take part in the research. Some authors suggest choosing more actionable and convincing ways to share user research results. Stickdorn et al. (2018) and Wechsler and Schweitzer (2019) recommend communicating results in the form of quotes, photos or videos.

2.4.3 Internal support and cultural change

One of the main challenges of user research and user involvement is the lack of support from the management side, from the developers' side or overall in the company (Bano & Zowghi, 2015). User research may be a time-consuming process that requires effort and resources. User involvement can be seen as additional research and development (R&D) expense or a cause of delays (Iivari, 2006). It can be difficult to justify to different stakeholders why the investment is necessary. More than half of the papers used in the study of Bak, Nguyen, Risgaard and Stage (2008) mentioned time as the main obstacle for user involvement. Many papers stated that user research is often time-consuming. In contrast to that, the development cycle is usually short and might not have enough time for involving users. Not only arranging

the interviews and other research methods may take a long time, but the feedback loop can be long (Olsson & Bosch, 2014). Because of the time-consuming nature of user research, it is difficult to convince different stakeholders to participate. According to Bak et al. (2008), the most significant obstacles of user research are the mindset of stakeholders, resources as well as customer participation. Since user research is resource-demanding, it is often prioritized lower than other activities such as creating functionality or increasing the speed of releasing new functionalities to users. In this case, organizations are thinking about short-term benefits rather than investing in the long-term sustainability of a product that would have the features users need (Lindgren & Münch, 2016). According to Gulliksen, Boivie and Göransson (2006), when the shortage in time occurs, it is often decided to save time by cutting the amount of usability and user involvement activities. User involvement is usually among the first items in the project plan to be abandoned. To sum up, organizations have limited resources. Since user research can be slow and time-consuming, it is often decided to cut it down to save time and money.

Failure to implement usability tests and other user involvement methods is often resulting from the management that does not see a link between market success and user involvement (Boivie, Gulliksen & Göransson, 2006). According to Shah et al. (2006), the establishment of customer-centric values is the responsibility of top management. Leadership commitment to customer-centric culture is important for initiating and sustaining initiatives for an organization to become customer-centric. It is necessary to create a culture of innovation and develop a customer-centric mindset (Rissanen & Münch, 2015). In the best-case scenario, everyone in the organization should be aware of the benefits of user research, collaboration with the users and customer-centric product development. In such organization, no major change takes place without testing ideas with the users since it is often more expensive to implement something that does not work for customers than spend resources on testing new ideas. Management is responsible for making sure that an organization can become more mature, as explained in the UX maturity section (p. 13). In mature organizations, user experience is not discussed separately, and everything starts with user involvement (Temkin, 2008). Such organizations also allocate more resources to user involvement since the return on investment is proven to be higher than user research expenses. Finally, in such organizations, all stakeholders are involved in user research. Thus, internal acceptance and willingness of stakeholders to take part in research strongly depend on UX maturity.

Not all authors agree that management is the main source of change. Often the change is initiated by designers since they understand the situation from the point of view of various stakeholders and the users (Kimbell, 2011). Designers aim to collaborate with users, management and others rather than working alone. Wechsler and Schweitzer (2019) found out that design artefacts, especially when presented in a clear and engaging form, can facilitate collaboration between stakeholders, increase empathy towards users and communicate customer-centric knowledge. Examples of such artefacts are videos, personas and customer journey maps. Elsbach and Stigliani (2018) came to a similar conclusion. The use of design thinking tools creates an emotional experience and physical artefacts. As a result, design thinking approach and the use of design tools can develop empathy and can build a customer-centric and collaborative organizational culture.

2.5 Selecting user research participants

This section provides theoretical answers on the third research question and discusses best practices of selecting users and overcoming challenges of getting access to the users.

2.5.1 User selection strategies

The selection of the right users is an important part of successful user involvement. Many authors agree that it is important to choose the right users (Gruner & Homburg, 2000; Bano & Zowghi, 2015), but there is no standard approach to how to select the users.

Some authors warn about sample errors that might occur from excluding a group of users from the research or including too many users of a particular type (Stickdorn et al., 2018). That may distort results and lead to wrong conclusions. The selection of participants varies depending on the user research method. Stickdorn et al. (2018) suggest using non-probability sampling methods for qualitative research. That means selecting a specific group of users instead of making a random selection. Some of the most common techniques are: selecting users who use the product in different ways, selecting users who have a comprehensive overview of the system, asking users who took part in research to recommend new participants and letting participants sign up for the study themselves. In quantitative research, sampling might be either random or focused on people who use certain features or can provide some other value. Stickdorn et al. (2018) conclude that since statistical accuracy is not the main idea of service design, the sample size only needs to be

large enough to notice the main patterns. A diverse group of participants can help to avoid a sampling error. Kristensson, Matthing and Johansson (2008) agree that it is necessary to involve a broad spectrum of users to ensure that the diversity of the ideas and feedback is representative of the user base. Selecting a diverse group of participants can minimize the risk of developing services suitable only to a small group of users.

Furthermore, some authors advise slightly different approaches. Bano and Zowghi (2015) suggest selecting the users that will benefit from participation and the output of the research. This group of users may be more motivated to participate in the research and may provide more accurate and well-thought feedback that would generate high-quality data. Olsson and Bosch (2015) write about the selection of highly prioritized customers. Prioritized customers can be most revenue-generating customers, customers that live in the area of target growth and other customers that may potentially bring value to the company (Kumar et al., 2010). Gruner and Homburg (2000) agree that financially attractive customers should be selected for user research since they usually belong to one of the main target groups of product development. Another target group may be lead users or users who have the most experience using the tool. The reason for that is their ability to provide accurate and in-depth feedback. Additionally, Gruner and Homburg (2000) conclude that selecting technically advanced customers may not always be beneficial since they may create misleading results that would not fit a group of less technically advanced users.

To sum up, many different strategies for selecting users exist. The right strategy depends on the goal of the research and the research method. It can be either non-probability sampling or a random selection of users. In the case of non-probability sampling, which is more typical to B2B, different types of users can be selected. It can be either prioritized and financially attractive customers, lead users that have a good experience of using the product, users that are using specific functionalities or users that signed up for the research themselves or were recommended by other users. Selection of a diverse group of participants can help to avoid a sampling error. However, in service design, the sample size does not have to be large as long as research can identify the main patterns.

2.5.2 Getting access to users

Several authors mention the difficulty of getting access to customers, especially in a B2B environment. Identifying the right users who are also available for participation in user

research is a difficult task. The process of accessing the right users can be one of the main challenges of user research (Bano & Zowghi, 2015).

According to Bak et al. (2008), it is difficult to convince users to participate actively in usability evaluations and other user research activities. Time is one of the main obstacles that users are facing when providing feedback. Furthermore, customers may not see the value in user involvement and may not have enough motivation to take part in tests and other meetings (Boivie et al., 2006). Steiber and Alänge (2013) admit that organizational culture can be a major obstacle for user involvement. Same as with internal organizational culture, customer's organization might not prioritize user involvement as they might not see a benefit and can be busy with work. One more obstacle in accessing the users is an issue that the development team is often organizationally isolated from the users. That either means that feedback is communicated via other functions such as marketing (Iivari, 2006) or that the process of approaching the users involves contacting stakeholders that are closer to customers.

Users' motivation to take part in user research may be different in B2B and B2C field. In B2C, the number of users is often larger, and users might not be committed to using the product or may use it less frequently than in the B2B field and may have more opportunities to switch to another product. B2C users who take part in user research may be driven by different motives such as financial rewards, social recognition or a wish to learn new technology (Hoyer et al., 2010). In B2B users might be expected to use the software for many hours a day or might have fewer opportunities to switch the solution. In general, they can be motivated to discuss the problems they are facing and give feedback about the system if they have an opportunity and enough time (Olsson, 2004).

In the B2B environment, a significant limitation is often the low number of users (Rissanen & Münch, 2015). The small volume of the users is especially challenging for quantitative methods since their accuracy depends on the sample size. It is sometimes impossible to use various research methods such as A/B testing or usage analytics in a B2B environment since they might not bring the intended value because of the low number of users. There also might be other obstacles, such as the inability to disclose what users do at work (Bak et al., 2008) or other case-specific barriers related to data protection. Customers may not allow monitoring the users inside the software (Lindgren & Münch, 2016) because of the sensitivity of their data or other privacy-related issues, including data protection legislation.

Since selecting the right users is important, it is necessary to ensure that suitable users are motivated to take part in user research. Users might not be willing to participate because participation costs them time, resources and effort. Therefore, to increase the probability of participation of the users, it is necessary to make sure that the benefits of participation are higher than the costs. Hoyer et al. (2010) identified four factors that can motivate users to be involved in product development: financial, social, technological or psychological. According to Yang and Chen (2008), to motivate users to take part in product development, it is necessary to ensure that they are getting such benefits as personalized services, monetary compensation or self-identity. Easy and accessible communication channels between the user and a service provider can also increase the collaboration (Kumar et al., 2010).

Furthermore, Etgar (2008) divides the benefits into intrinsic and extrinsic. Intrinsic benefits refer to the enjoyment of the experience, for example, because they differ from other tasks of the user. Extrinsic benefits such as learning skills and monetary compensation are achieved at the end of the activity. According to Kristensson et al. (2008), intrinsic motivation has a good effect on creative problem solving since the user is taking part in a certain activity because it is personally meaningful rather than because of a reward. Thus, a type of motivation can affect the quality of feedback. If users have intrinsic motivation, user involvement in product development may be more successful. That explains the motivation of users in a B2B environment, who are using the product on a day-to-day basis, to provide feedback for improving the product. Even though other factors can complement their motivation, their main motivation is usually the desire to make the tool more beneficial for their work.

2.6 Summary of literature review

This section provides a summary of the most important findings and theoretical answers to the research questions and the reason why user involvement is valuable.

Moving beyond assumptions (Stickdorn et al., 2018) and making decisions based on data gathered in user research help companies focus on the creation of products that bring value to their customers and users (Sauvola et al., 2015; Fabijan et al., 2015). Early user involvement improves the accuracy of product requirements and consequently saves time, decreases the cost of product development and improves product fit to the needs of users

(Kujala, 2003). Even though user involvement does not guarantee the success of the product, it may significantly increase the chance of user satisfaction (Goodman et al., 2012).

It is essential to get continuous user input during product development (Stickwork et al., 2018; Lindgren & Münch, 2016; Olsson & Bosch, 2015). Better results in product development can be achieved when making decisions based on user-related data rather than assumptions continuously on all phases of product development by using various user research methods. Furthermore, the initial stages of product development have the largest number of design alternatives and the lowest cost of change (Bias & Mayhew, 2005). By starting user research early companies can select suitable design alternatives and avoid a high cost of change (Bosch-Sijtsema & Bosch, 2015; Kujala, 2003). Since each user research method has its own biases and challenges, it is better to use a mix of user research methods. A combination of conscious, uniformed, qualitative and quantitative methods can be used in user research to improve the validity of results (Stickdorn et al., 2018; Bosch-Sijtsema & Bosch, 2015).

Stakeholders from various backgrounds and teams should be included in the user research from the start and during the whole process of product development (Kuusinen & Väänänen-Vainio-Mattila, 2012; Gothelf, 2013; Sohaib & Khan, 2010). The most powerful way of learning about the users is by observing them. “Seeing is believing” (Stickdorn et al., 2018, p. 280). The only way of making others support and use the findings is including them in user research. Stakeholder participation in user research can increase the attention to customer needs and the appreciation of user research itself. Internal acceptance and willingness of stakeholders to take part in user research depend on the customer-centricity of an organization. In customer-centric organizations, everybody understands the benefits of user involvement and no significant changes take place before testing them with users (Rissanen & Münch, 2015).

Careful selection of users is essential for getting the best outcome of user research (Gruner & Homburg, 2000; Bano & Zowghi, 2015). User selection approaches may vary depending on user research methods and the users. Some of the common strategies are selecting financially attractive customers, lead users that know the product well (Gruner & Homburg, 2000) and users or the customers that would bring more value than others (Kumar et al., 2010). Depending on the research, it can be important to select several types of users to ensure that results are not biased and do not focus on certain user groups (Kristensson et al., 2008; Stickdorn et al., 2018).

Getting access to the users can be difficult in the B2B field (Lindgren & Münch, 2016). Customers and users may not see the value of their input and may not have time to take part in user research (Bak et al., 2008). It is necessary to make sure the benefits that users get are higher than the costs to motivate them to take part in product development (Hoyer et al., 2010; Yang & Chen, 2008). It is important to keep in mind that different factors can motivate users, but often and especially in B2B, intrinsic motivation is more powerful than material rewards (Kristensson et al., 2008).

3 Research methods and data collection

This chapter introduces the methodology used for gathering empirical data and explains the choices made at each step. It presents the research approach and provides information about case selection, data collection and analysis. Furthermore, it introduces the research context and case company descriptions.

3.1 Research approach

The thesis is aiming to answer questions related to the main research problem of how user research can be utilized in B2B SaaS companies. A qualitative approach was chosen as a research method in this thesis. According to Corbin and Strauss (2008), qualitative research helps to discover the experience of people, determine how the meanings are shaped and find new variables. Qualitative research is suitable for studying an issue from the point of view of insiders. It focuses on processes, contextual descriptions and interpretations of activities explained by people (Lapan, Quartaroli & Riemer, 2011). Qualitative research was selected due to a need to explore the topic deeply and answer questions “why” and “how”. Qualitative research is suitable for this thesis since it can provide different interpretations and in-depth information about user research approaches in various organizations.

An interpretive multiple case study approach is used in this thesis. Interpretive research aims to understand studied phenomena through the opinions and experiences of people. Case study research provides a dynamic view of the studied issue in a specific context (Järvensivu & Törnroos, 2010). Farquhar (2012) suggests that case studies focus on contemporary issues and examine the subject in-depth and in real-life situations. The author emphasizes that case studies are especially suitable for studying contemporary issues and phenomena that occur

in a specific situation or context. Mills, Durepos and Wiebe (2010) admit that case study research is used for getting rich and detailed information about cases as well as an understanding of stakeholders and processes. That approach suits the aim of the study because the idea is to understand how companies do user research and find best practices that would fit the context of B2B SaaS organizations.

A semi-structured interview approach was chosen for data collection. This method is common in qualitative studies. The main strength of semi-structured interviews is the flexibility in discussed issues. In semi-structured interviews, a certain list of topics is usually covered by participants to understand their points of view on selected subjects. This approach helps to identify similarities and differences between cases. The downside of such interviews is that they are time-consuming in comparison with quantitative research. In addition, it may be challenging to find participants, and it takes much time to transcribe the interviews and analyse the findings (Gillham, 2000).

3.2 Case selection

Case companies were selected based on multiple criteria. First of all, two types of companies were interviewed: service design companies and B2B SaaS organizations. Service design companies do various consulting projects and help organizations improve their services, create new solutions and internal processes. They place human relationships at the centre of everything they do. Service design companies have experience in conducting user research in different industries and organizations. They have a broad overview of methods, challenges and best practices of user research. The knowledge shared by business designers is valuable input for answering research questions. The second type of case companies is software organizations. Since research is focused on the B2B SaaS, this field was the main requirement for company selection.

Another important requirement was selecting both less mature and more mature organizations from the point of view of UX maturity. An equal number of companies that have user experience incorporated in the company and those that have not yet wholly embedded user involvement in the company were selected. Service design companies can be considered more mature organizations since they are using customer-centric approaches in their work. One other requirement for all of the organizations was an aspiration to be

customer-centric or have a goal to become customer-centric, do user research proactively and employ user research professionals.

Most of the case companies have their headquarters and UX designers located in Finland. Finnish companies were chosen to gather data related to the main case company Sievo and explore user research situation in Finnish software companies. One company outside Finland was selected for the research based on its UX maturity level. Since the main idea was to compare the companies based on their customer-centricity rather than by their location, the choice did not distort the results but rather added valuable insights. Furthermore, it was important for companies to have several thousands of users located all over the world since research methods they use may be affected by the location of users. Finally, B2B SaaS companies that develop complex tools that are used full-time by their customers were selected to make the cases comparable with the main case company.

To sum up, the chosen companies have the following characteristics:

- B2B SaaS companies and service design companies
- Both customer-centric and less customer-centric organizations
- Less customer-centric companies aim to become customer-centric
- User research is done by people with good experience in this field
- Users are located around the world
- SaaS companies provide solutions that can be used full-time by B2B users

As Farquhar (2012) mentioned, it can be time-consuming and challenging to negotiate access to case companies and find people to interview. Sievo helped to arrange interviews with the case companies and shared the contacts of potential interview candidates. Some of the interviewees were suggested by already interviewed companies. Other interviews were agreed via LinkedIn either by directly contacting candidates or by contacting candidates who volunteered to take part in the research. All in all, it was challenging to find companies that are involving users in product development and especially organizations that are more mature. On the other hand, it seemed that for most of the candidates, user research was an interesting topic to explore. Interviewees were open to talk about various user research topics, problems and successes in their organizations and had a lot to share. Some of the interviewees admitted that they have little information on how user research is arranged in other similar organizations and they would like to learn about it.

3.3 Data collection

Data was collected by conducting eight interviews with six B2B SaaS companies and two service design companies. The goal was to find empirical examples of how B2B SaaS companies do user research based on the experience of interviewees. Eight interviews were sufficient since the findings started repeating, which meant that enough information on the most common themes was collected. It can be argued that additional interviews would have collected no new or significant data. Even though only two interviews were conducted with service design companies, most of the answers and thoughts were similar. Thus, it was not essential to study service design field further. In addition, it was important to explore user research methods that B2B SaaS companies use as well as their challenges and success stories. Since service design companies mainly do short-term projects with SaaS companies and organizations in other industries, it was decided to focus more on B2B SaaS company interviews to capture industry-specific trends, challenges and opportunities.

The interview guide and the questionnaire were constructed based on the theoretical findings related to research questions and the topics of interest identified by Sievo. The questionnaire was divided into six different sections and had 16 main questions in total (see Appendix 1). The main topics of the interview were: user research strategy, methods, users and their selection, internal stakeholders, challenges, best practices and future opportunities. All interviews were conducted online and lasted between 50 min and 90 min. Gillham (2000) suggests that face-to-face interviews can ensure the richness of communication. Communication via online tools can be more challenging in terms of creating a suitable connection and trust level between the interviewer and the interviewee. Even though it would have been better to meet interviewees face-to-face, there were no major problems related to online interviews, and it was possible to get good quality answers to all main and follow up questions.

Interviews were arranged carefully to make sure that everybody is familiar with the topic and questions, and nothing is disturbing the interview process. Approximate times required for each section were calculated to meet the time limits of the interview. All interviews were recorded and transcribed. The interview structure was initially based on the literature review. However, in the interview process, more topics that are currently significant in user research were identified. The process of data collection was documented to increase the reliability of the study (Yin, 2009).

Finally, ethics is an important issue in qualitative research. The main responsibility of a researcher is to ensure that information stays anonymous (Corbin & Strauss, 2008). Therefore, the names of participants and company names were anonymised, and collected data was stored in secure places. Information that is used in the thesis was examined carefully to make sure that interviewee details would not be identified based on the presented data (Lapan et al., 2011).

3.4 Data analysis

The next stage after data collection is the analysis of the results. First, each case was studied separately to become familiar with the patterns that cases have. After examining each case one by one, the patterns across the cases were compared (Eisenhardt, 1989).

Thematic analysis was chosen for analysing the data gathered during interviews. Transcripts were examined in order to find main themes, topics and relationships. The process of coding was implemented for each interview transcript. The idea of coding was to classify data. Information was first divided into different codes, then the main concepts and then categories or themes that group the concepts and assign them to a higher-level cluster (Corbin & Strauss, 2008). Categories and themes for interview questions and data analysis were chosen mainly based on categories that were identified in the literature review (Mills et al., 2010). This approach makes it easier to analyse and compare data since it is assigned to certain themes. Therefore, the findings from empirical data could be compared to the literature review. As a result, an overview of the user research based on previous findings and the findings related to the case company context was created.

Furthermore, multiple case study research often includes a low number of cases. It may not be possible to generalise the results and apply them to other situations (Yin, 2009). On the other hand, the case study provides a deep understanding of certain situations and creates knowledge that can contribute to theory and practice. Generalisability or the ability to apply results to a broad population is often not the main aim of a case study. The most important issue is the validity of the research or the suitability of the data for the goal of the research (Lapan et al., 2011).

3.5 Research context

This section provides more information about the research context. It describes the context of B2B SaaS companies and the context of service design companies in Finland and Nordics. It also provides more information about case companies that took part in the research.

3.5.1 SaaS business model

Software as a Service (SaaS) is a business model, in which users typically access the software via a web browser. In contrast to the traditional software delivery model, customers do not have to install the software on their computer, and all updates are applied automatically. The service is usually purchased on a subscription or usage basis (Liao, 2010). The SaaS provider hosts and maintains the software applications and gives access to the users over the network. SaaS model allows faster software updates and more flexibility in terms of software customizations as well as being able to use the software in various locations and on different devices (Joha & Janssen, 2012). Centralized management is one of the main benefits of SaaS. This means that SaaS supplier is responsible for IT support as well as software updates, maintenance, security and other software management issues. The supplier is providing all necessary software services and is using a "one-to-many" business structure by providing the software to many users at the same time. SaaS model makes it easier and cheaper for customers to use the software since all IT issues are outsourced to the service provider (Ma, 2007). According to "Software as a Service (SaaS)" (2019), the SaaS market size and worldwide revenues have been growing rapidly during the past years and are expected to continue growing in the following years.

Moreover, SaaS suppliers have favourable conditions for user research. All of their users are connected to the supplier via the web, which makes it easier to gather quantitative data. Software providers can observe which features are used by users, how frequently, in which sequence and for how long (Lindgren & Münch, 2016). Users can also give feedback while using the software or via any other online channels chosen by the supplier. This feedback can be addressed relatively fast since updates can be done automatically, and software suppliers often make software updates frequently. The challenges that the SaaS model businesses are facing are related to qualitative research and remote users. Since the software can be used in any location with Internet access, users can be located in any part of the world. User observations and interviews have to be arranged remotely if user researchers

cannot travel long distances to see the users. Remote interviews, as well as customer visits, might be hard to organize and time-consuming.

SaaS model is opening new opportunities for involving users in software development and learning new information about them. Because users are connected to the software, it is becoming easier to track how they are using software and ask for their feedback via in-app tools. On the other hand, since users can connect to SaaS solutions from anywhere, some challenges related to qualitative feedback emerge. It is not always possible to arrange face-to-face interviews and observation because of the distance between service providers and users. Technology-based service companies are losing an important source of information as they rarely see their users (Matthing, Kristensson, Gustafsson & Parasuraman, 2006). According to Kristensson et al. (2008), this challenge is typical for technology companies that have a little opportunity for face-to-face interaction with the users and observing the users in their context and are thus having difficulties in understanding their expressed and latent needs.

3.5.2 B2B software

In comparison to B2C SaaS, B2B software suppliers usually have fewer users and users are often using the software on a long-term basis. Depending on the type of software, it might take a long time in the B2B field to reach an agreement with a customer and complete software implementation. That might be due to the high cost and complexity of software. Since the revenue often comes from a lower number of users in the B2B field, it is especially important to meet the needs of customers and users and focus on the features that provide the biggest value. On the other hand, some of the challenges that the B2B field might be facing are the limited scope of experimentation and user research opportunities because of the lower end-user number compared to B2C (Rissanen & Münch, 2015). Another challenge is data security issues and sending customer data to a third-party in case of usage analytics. That can be strictly regulated due to the confidentiality of customer data and risks associated with the lack of data security (Sauvola et al., 2015).

One of the main advantages of B2B companies is the willingness of users to improve the software, especially if they are using it daily. Their work speed and efficiency might depend on the software. Therefore, they tend to be more interested in sharing improvement suggestions and taking part in usability studies and user interviews than users from the B2C field (Rissanen & Münch, 2015). On the other hand, B2B users often do not know why their

company selected a particular software. If they are forced to use the software and do not have an opportunity to switch the supplier, they might not be motivated to give feedback.

3.5.3 Service design in Finland and Nordics

Service design methodology and customer-centric approach are common in Nordic countries. According to Service Design Network (2018) that created a documentary about the value of service design in Denmark, Finland, Norway and Sweden, there is something that makes this region especially suitable for service design practitioners. According to them, one of the reasons is the open-mindedness of people and the special way of how people collaborate and work together "across boundaries". Since Nordic countries are small, with a population of 5.5 million in Finland (Statistics Finland, 2018), 10 million in Sweden, 5.7 million in Denmark and 5.3 million in Norway (World Population Review, 2019), the countries have to collaborate with their neighbours. Moreover, Nordic countries have a good level of English, which makes it easier for them to collaborate with people from different backgrounds. Lastly, people coming from this region have similar values. They care for their family, personal connections and people in general. Those values can affect the way they design products and services (Service Design Network, 2018).

A similar topic of why service design is popular in Finland was addressed by Mikko Koivisto (2017). According to him, Finnish industrial sector is changing for the service-intensive industry, and service design can improve the competitiveness of Finland. Secondly, people in Finland have high standards of living, and their expectations for high-quality services are always rising. It is important to change the way things are created to cut the cost and increase the quality. This is where service design starts playing a big role. Another point that Mikko Koivisto mentioned is that Finnish culture fits well to service design. Historically, non-hierarchical culture with common values and a need for collaboration and hard work was a necessity to survive. Nowadays, such society serves as a good foundation for service design. Apart from that, Finland has taken actions to promote service design. Service design vocabulary was translated into Finnish, and some steps were taken to educate professionals and spread the message about service design. However, Mikko Koivisto also mentioned that little statistics about service design is currently available.

To sum up, there is little information about the power of service design in the Nordics and Finland. Regardless of that, it can be argued that this region is especially suitable for service design. Some of the reasons for are, firstly, a need to make service-intensive

industries more competitive. That can be achieved by keeping the quality high while reducing the costs by applying service design principles and creating the products in a human-centred and collaborative way. Secondly, this region has favourable conditions for service design because of the cultural fit and the way people are thinking and acting. That creates an opportunity for the companies to use service design methodology in their ways of working to become more customer-centric and improve customer experience.

3.5.4 Case companies

In the following sections, case companies are described to provide a better understanding of the interviewed organizations. The real names of the companies are anonymized and replaced with the names that are somewhat related to their industry to make it easier to distinguish them in the text.

Table 1 shows the list of interviewees who are doing user research in the case companies. People who are doing user research are UX, business, product designers and user researchers. In smaller organizations, user research is implemented by one person who is also doing other design work. In bigger organizations, a team of designers or a team of user researchers is doing user research.

Table 1. Interviewee profiles

Company	Title
Sievo	Senior UX designer
ServiceDesign Co.	Business designer
DigitalConsulting Co.	Business designer
SupplyChain Co.	Lead UX Designer
SalesAutomation Co.	Lead UX Designer
DataScience Co.	Senior UX designer
Advertising Co.	Product designer
CustomerRel Co.	User researcher

Most of the designers and researchers have more than seven years of experience working as a UX designer or in a similar role. As a result, they are leading projects or design teams or are the main designers in the case companies or a specific product or team. Moreover, most of the designers have lived, worked or studied abroad. This means that they may have gotten a diverse experience and skills and may be able to understand user involvement from different points of view.

Furthermore, Figure 8 (p. 38) summarizes the most important information by which the case companies are compared in the following chapters. As mentioned, most of the companies are originally from Finland and one of them has headquarters in the United States.

Some of them have other offices located mainly in Europe and the United States. The age of the companies varies with the oldest company being more than 25 years old and the youngest less than ten years old. The number of employees also varies from a low number of 20 employees to large organizations. All companies have several thousands of global users. All of them are creating B2B SaaS products for clients from different industries. Service design companies are also located in Finland. Their number of employees and other metrics are not relevant to this research. Their experience of creating services for different organizations, including B2B SaaS, is important for this thesis.

Finally, the companies are divided into more customer-centric and less customer-centric based on the UX maturity model presented in the literature review (p. 13). Companies were split to less and more mature based on the role of user involvement in product development, management commitment to customer-centricity and existence of customer-centric culture (Temkin, 2008). In Figure 8, less mature organizations are marked with a green colour, and more mature companies are marked with a red colour.

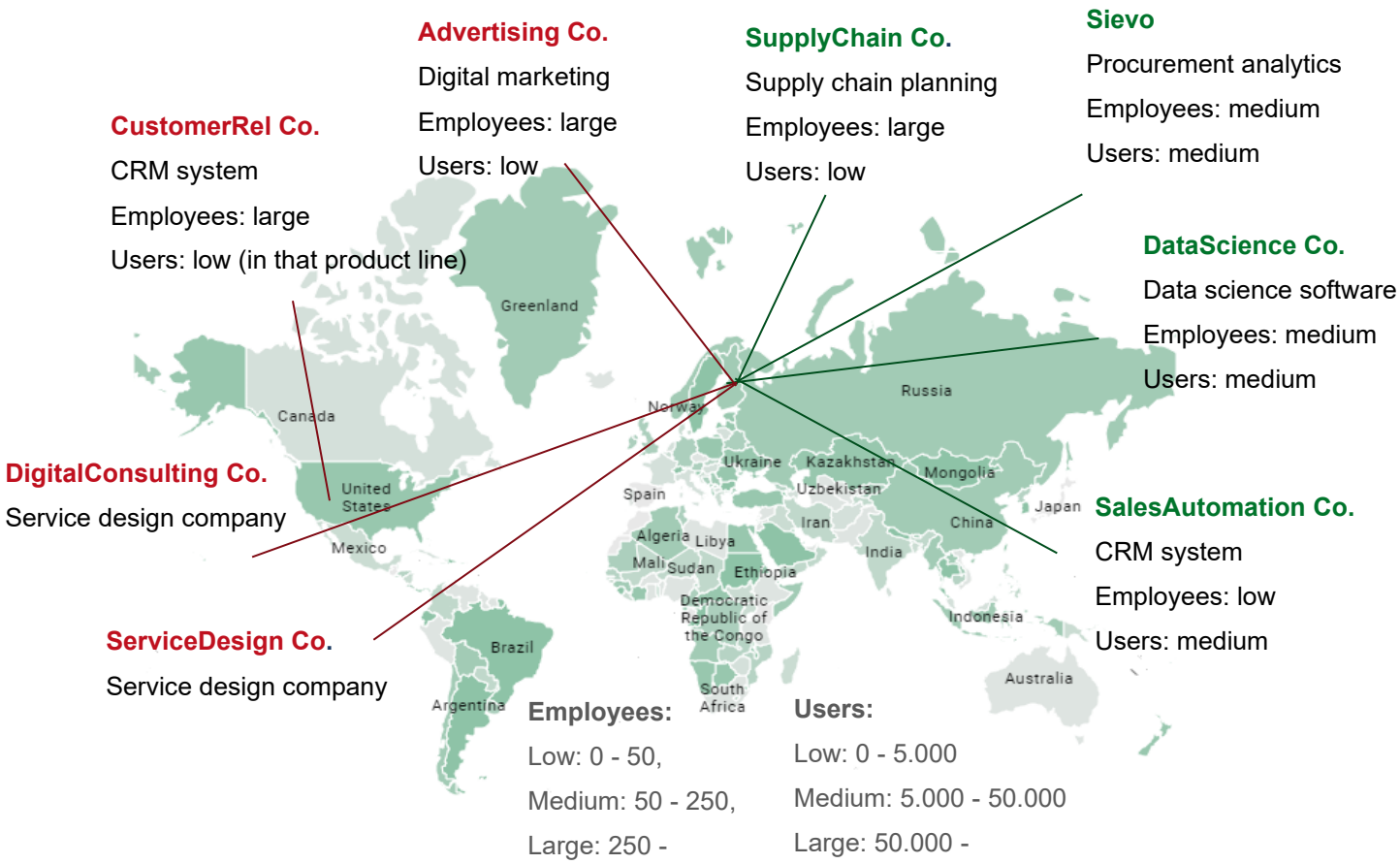

Figure 8. Case companies: industry, employees, users, location and UX maturity

UX maturity: = less mature, = more mature

4 Findings and discussion

This chapter introduces the main findings of the research. First, the value of user research and approaches to measuring success are explained. Then, user research in each company is briefly described. Finally, findings related to the main research questions are presented and discussed.

4.1 The value of user research

“The only people that see your company really end-to-end are the customers” (Service design network, 2018). This section explains why user research matters for the case companies and what they aim to achieve by involving users in product development. Based on the interview answers, it can be argued that the main idea of user research in the case companies is similar. Case companies are doing user research to create a product that meets customer needs, solves their problem and is efficient and easy to use. They want to create a product that customers would want to buy and would love to use.

“User research is the only way to really understand what our customers need” (Sievo). It is difficult to understand what users need and what their problems are without doing user research. “User research is all about reducing the risk” (CustomerRel Co.). When developing a product, a company is facing many risks. The company might be investing in something that customers will not want to buy or losing time by focusing on wrong issues. User research can help them understand what matters the most and focus on important issues. According to DigitalConsulting Co., only 10-15% of features are used and are important. By focusing on relevant features, companies can improve user experience. Furthermore, user research can help understand the users, their pain points as well as expressed and latent needs. It can justify design decisions and ensure development is on the right track. By involving users in product development, companies can create products based on data rather than assumptions and decrease the amount of guessing. By focusing on the right issues, the development team can save money and time. Understanding users can support internal communication, make sure that everybody is “talking about the same thing, the right thing and solving the right problem” (DataScience Co.). One other important issue that was mentioned is that it is “very important to be close to customers to survive” (Advertising Co.). DigitalConsulting Co. agreed that user research is the “new way to survive in the market”. This is again related to the idea of creating a product that customers need, want to buy and use.

Based on the answers, the goals of user research can be divided into four categories that are closely related to each other:

1) Understanding the needs of the users
2) Finding the right focus for product development
3) Creating a product that customers want to buy and love to use
4) Surviving in the market and being competitive

Moreover, company context can influence the aim of user research and create additional goals. For SalesAutomation Co., because of their pricing model, it is important to *"*make the customers so happy with the services that they would want to buy the other services*"*. SalesAutomation Co. is using data from user research for building a solution that creates the best value for their users and fits their needs. By doing that, they can sell more services to customers that are not using all functionality. Other companies, such as Advertising Co., are working with technologically advanced clients. For them, to survive and be able to develop their product fast and in the right direction, it is essential to build it together with the customers. DataScience Co. is building a complex product, and it is important for them to improve understanding of what customers are doing. User research helps them create a common understanding of the problems they are solving and justify the decisions they make in product development based on data.

To conclude, all interviewees agreed that user research is important and valuable. "It is something that you need to have always when developing a product" (Sievo). Many reasons for involving users in product development are shared by the majority of interviewed companies, yet, many case companies also have their own goals for involving users in product development.

4.2 Measuring the success of user research

In the previous section, it was concluded that user research is important, and it is essential to implement it during product development. But when can organizations see the benefits of user research, and is it possible to measure the value of user research? This section addresses these questions and explains how case companies measure the results of user research and how soon they can see the value.

Case companies find it important to measure success, but most of them have not yet found out how to measure it. “Success of our product would be the success of user research” (CustomerRel Co.). It is difficult to measure the success of user research since product success depends on many other factors. For that reason, most of the interviewed companies do not have any established mechanisms for measuring success but are planning to improve that. As an example, CustomerRel Co. is developing a benchmarking tool that would measure the performance of products. They are planning to measure the UX of different products over a period of time and connect the results to user research. DataScience Co. is creating a new product based on the old one and is thinking to measure the percentage of tasks that the new product can solve in total as well as the tasks that the new product can solve better than the old one.

Some companies could identify the value of user research without measuring it on purpose. Sievo made major user interface (UI) changes. After the rollout, they got several positive comments and various feedback from customers. Direct feedback is one way to measure success. On the other hand, it is a spontaneous method and depends on the size of the change. It is often easier for customers to provide negative feedback rather than positive unless the impact of a positive change is big. Furthermore, DataScience Co. noticed that after they made changes that were based on user research, their sales doubled since they started solving the right problem. However, they noticed that they could see the results of their work only two years later, which is a rather long time. Another way for measuring results that, for example, DigitalConsulting Co. is using is the net promoter score (NPS) and other types of KPIs. They start projects from creating KPIs, which in the beginning are user-driven and are identified from customer feedback. Other KPIs that they are setting and measuring can be related to the creation of value such as saving time, being more efficient or increasing the business. On the other hand, according to Advertising Co., it is difficult to separate user research and design metrics from overall product metrics. They were not able to come up with any separate metrics for user research only. Instead, they think it is important for designers and user research to be aligned with product managers. In this case, product managers would be able to see the value of research and its impact on the product. If user research is done well, it will result in the product that is “needed and is loved by customers” (Advertising Co.).

To sum up, companies find it important to measure results. It is difficult to establish mechanisms for measuring success, and most of the companies have not established them

yet. Even without measuring the success, they could see how their products, sales or other KPIs improved after they made changes in the product based on user research.

4.3 User research in the case companies

In this section, the user research approach in each case company is described separately to create a better understanding of company-specific context. Later in this thesis, results are compared by topics to answer research questions. Furthermore, there are eight case companies. They can be divided into two groups according to the UX maturity. Service design companies ServiceDesign Co. and DigitalConsulting Co., as well as B2B SaaS companies Advertising Co. and CustomerRel Co., are referred to as mature or customer-centric organizations according to the experience-based differentiation model, presented in the literature review (p. 13). Mature companies consider customer experience as a core or incorporated part of the company and have a customer-centric culture. Other companies are referred to as less mature organizations. They have recognized the importance of user experience and are taking active steps to become customer-centric. A comparison between two types of case companies presented in this thesis helps to find the best practices of user research and answer research questions.

Descriptions of user research in service design companies ServiceDesign Co. and DigitalConsulting Co. are not presented in this section. In contrast to B2B SaaS companies, service design companies work with different organizations and their user research approach varies from case to case. The findings related to their experience in user research are presented in the following sections and compared to experiences of B2B SaaS organizations.

Sievo

Sievo is a procurement analytics company with headquarters and design team located in Finland. The interview was conducted with a Senior UX designer who is doing strategic user research in the company. Sievo has more than 150 employees and a medium number of users with a global presence. According to the interviewee, users are very specialized, and they “dive deep into the tool”. Sievo is currently using different methods of user involvement such as interviews, customer visits, surveys, usage analytics and is testing new methods. The goal is to involve users in product development by changing ways of working and making sure that users are always involved in product development.

SupplyChain Co.

SupplyChain Co. is a supply chain planning company with headquarters and design team located in Finland. The interview was conducted with a UX designer who leads a full-stack design team. The company has a large number of employees and a low number of users with a global presence. Since users are using the product for 8 hours a day, the company pays much attention to efficiency when developing the product. Currently, user research is done by the design team. The company started doing user research more frequently only recently, and they are constantly developing the user research process. Internal user research is playing a big role in product development since the company has many internal users, and it is easy to arrange various tests and interviews with them. Their main development areas are remote user research as well as creating a process that would make results actionable and ensure that the company is benefitting from user research.

SalesAutomation Co.

SalesAutomation Co. is a customer relationship management company located in Finland. The interview was conducted with a Lead UX designer, who is the only designer in the company which has around 20 employees. The company has over 15.000 users. According to the interviewee, the product is complex and has many different features and a large number of various use cases. Some users are behaving similarly, but some of the users are using the product in a very specific way. User research was initiated recently and is mainly implemented by the UX designer. The company is thinking of formalizing the user research process to enable everybody to gather information about the users. They are also developing various tools for quantitative analysis, such as in-app surveys and a module that would aggregate usage data.

DataScience Co.

DataScience Co. is a data science company with the headquarters located in Finland. The interview was conducted with a Senior UX designer, who is the main designer of one of the products. The company has around 70 employees and a medium number of users with a global presence. The company is providing complex data science solutions. For that reason, UX designers are organizing many interviews with internal subject matter experts in addition to external users. The company started involving users in development only recently and did a big user research project when changing one of the products. In that project, they were

using a variety of qualitative methods such as remote interviews, observations, card sorting, task analysis and brainstorming. User involvement is currently ad-hoc. Designers start organizing the research when user input is needed. They choose methods by identifying "what helps them the most" in a particular situation and are trying to be flexible with the methods.

Advertising Co.

Advertising Co. is a digital marketing company with headquarters and design team located in Finland. The interview was conducted with a product designer, who was the first designer in the company and is now leading the design team. Advertising Co. has a large number of employees. The company has a low number of users with a global presence. It is important for the users to have new features available fast since that affects their performance. They do not need a perfect UX and appreciate development speed more. In addition, the company is less than ten years old. From the beginning, everybody in the company was working closely with customers and there was a "tight feedback loop". Currently, designers are mainly using qualitative methods, such as interviews and observations, to involve users in product development. They are often meeting customers face-to-face since direct contact is important for establishing a good level of trust and understanding. When developing features, they are trying to use all information collected in user research as well as by customer managers and in customer support. In the future, they are planning to use more quantitative research methods, such as usage analytics.

CustomerRel Co.

CustomerRel Co. provides various customer relationship management (CRM) products. The interview was conducted with a User Researcher from a product line that is working with non-profit organizations and educational institutions. The company has a large number of employees, and its users are located around the world. The company has several millions of users, but the product area, where the interviewee works, has a low number of users. They have several product lines, product areas and many development teams. Researchers are usually assigned to one of the teams and are facilitating user research. The meetings they organize are open for everyone, who is involved in product development: product teams, product managers, designers, engineers and others. According to the interviewee, the company is customer-centric. Some years ago, research was involved only in the later stages

of the development process, for evaluation purposes. Now they always start with user research when creating something new. The organization experienced a cultural change that started approximately five years ago when a person who would represent user researchers on the management level joined the company. Since that time, they were able to change the culture and make user research a part of everything they do.

4.4 User research methods

This section is presenting case company findings that answer the first research question: "Which user research methods can B2B SaaS companies use to get valuable insights?" First, the methods that case companies are using are presented, and the choice of methods is explained. Then the practice of combining different methods and doing continuous user research is compared in mature and less mature organizations. After that, the benefits of combining different methods and doing continuous and integrated research are explained.

4.4.1 Which methods do companies use?

Table 2 (p. 46) shows which methods case companies use to learn about the users. Case companies mainly divide research methods into qualitative and quantitative because those methods serve a different purpose and gather different types of data. Qualitative methods are used for discovery, exploration and learning. They capture the natural behaviour of the users and show hidden needs. Qualitative methods are usually more proactive and are used by more mature organizations. Quantitative methods are used for validation and narrowing down the scope of the problem. "Design savvy organizations use mostly quantitative surveys" (ServiceDesign Co.). Apart from the surveys, other methods such as usage analytics belong to quantitative research methods. In this thesis, analytics refers to tools that show how users are using the product (Hay, 2017).

In Table 2 (p. 46), the number of users is also divided into medium and low. This factor, along with the other company context factors and maturity of an organization, may influence the choice of user research methods. Companies are divided into two categories. A low number of users refers to 5000 users or less. A medium number of users refers to 5000 users or more. This scale is based on the answers of the case companies and their perception of the size of their user base.

Table 2. Quantitative and qualitative user research methods in the case companies

Company	Number of users	Qualitative methods	Quantitative methods
Sievo	MEDIUM	Interviews & observations, customer visits, workshops	Surveys, usage analytics
SupplyChain Co.	LOW	Interviews (internal & external), observations	-
SalesAutomation Co.	MEDIUM	Interviews & observations, customer visits, card sorting, customer tickets	Surveys, usage analytics
DataScience Co.	MEDIUM	Interviews & observations, card sorting, task analysis, ideation, brainstorming	-
Advertising Co.	LOW	Interviews & observations, customer visits, info from customer support and customer managers	Surveys (in-app)
CustomerRel Co.	LOW	Interviews & observations (remote), customer visits	Surveys; may use analytics but not in each project

Number of users: Low = less than 5.000 users, Medium = more than 5.000 users

Qualitative methods

Starting with qualitative methods, all case companies are doing interviews and observations, either remotely or face-to-face by visiting customers (Table 2). Most of the interviewees said that qualitative methods are the main methods they use. According to the case companies, qualitative methods are valuable because they provide deep insights into the researched subject. In addition to interviews and observations, some companies are arranging workshops, card sorting, prototype testing and brainstorming sessions (Table 2). SalesAutomation Co. and Advertising Co. are paying attention to customer support cases and are using information about customer pain points when developing products. It can be argued that there is no relation between the selection of qualitative methods and the number of users in the case companies. This selection depends on the purpose of the research. As an example, DataScience Co. decided to do task analysis and observations when creating a new product based on the old one since it was unclear how the users are using the old product. SalesAutomation Co. is using card sorting method when they are getting a new customer to "shape their instance of the software".

Furthermore, companies that started involving users in product development recently, have increased the number of interviews, observations and qualitative research. This is the

best way to “dive deep into the subject” and understand users, their needs and motivations better (Sievo). Interviews, observations and brainstorming sessions are working well in the case companies and are bringing valuable insights. More mature companies are still considering interviews and observations as their main methods. In contrast, companies that have not yet recognized the importance of user involvement, are most probably not using any qualitative methods for learning about users or are using them rarely, based on the information from service design companies and previous experience of the case companies. Moreover, the selection of methods may depend on the number of employees. SupplyChain Co. is arranging many internal interviews and testing sessions since often it is an easier and faster option, and there are enough internal users to test their ideas with.

Quantitative methods

Even though all companies are using qualitative methods, not all of them are using quantitative methods for user research. A common quantitative method is surveys. There are different ways of how companies use surveys. They vary from yearly surveys, net promoter score (NPS) surveys, surveys after launching a feature to in-app surveys. There is no clear relation between the number of users and the choice of a survey method. This choice depends on the company context and the tools they have. One common trend is that several case companies are planning to implement in-app surveys (Sievo, SalesAutomation Co. & CustomerRel Co.). A big advantage of such surveys is that the users can answer questions at the time when they are using a specific feature. That might increase the accuracy of the feedback but might as well be disturbing if used at the wrong time. Surveys are often used in both customer-centric and less customer-centric organizations since it is easy to implement them and fast to get results. For the same reason, design-savvy organizations sometimes use surveys as one of their only user research methods (ServiceDesign Co.).

Moreover, most of the case companies are not using user behaviour analytics either at all or regularly for various reasons (Table 2, p. 46). DataScience Co. mentioned that it takes time to integrate usage analytics into the software. Advertising Co. has a low number of users that have different workflows. In this case, it is difficult to get a good understanding of which features are used by users and how. That issue can be typical to B2B companies and can limit the opportunity to use analytics. SupplyChain Co., SalesAutomation Co and other organizations are avoiding third-party analytics tools because the companies are dealing with sensitive customer data. That also affects the choice of analytics solutions. To

make sure customers' data is not shared with external providers, they need to have a self-hosted analytics solution. That might be either a bigger investment or might have less functionality than existing solutions. Furthermore, in CustomerRel Co. analytics belongs to the data science team and is not directly related to the user research team. User researchers can use analytics to increase the validity of their results, but they are using it only in some of the projects. Sievo and SalesAutomation Co., on the other hand, have usage analytics tools (Table 2, p. 46) and are planning to develop those solutions further since they are useful for narrowing down the issues they are researching. A choice to use analytics does not depend much on the maturity of an organization but depends on the number of users and the ability to overcome such challenges as data protection, setting up valid metrics and integrating analytics into the product. On the other hand, more mature organizations can be more willing to invest in analytics to increase their knowledge about users.

Analytics serves as a good starting point for qualitative research by showing how certain features are used. It can help identify the best customers to talk to in person (Advertising Co.). Analytics can also help justify decisions and prioritize ideas. "It can immediately justify that this function is more important than another one, and then you do not need to get personal, you do not need to hurt anybody. It is about pure data" (DataScience Co.). That is why most of the case companies see a need for analytics and are planning to use it in the future. Advertising Co. is planning to reduce the manual work of qualitative research by using analytics and have a better foundation for interviews. The same is happening in SalesAutomation Co. They are building a module that will allow admin users to generate statistics. In this case, admin users will have aggregated information and will be able to have more in-depth discussions about specific use cases (SalesAutomation Co.).

4.4.2 Combining different methods

Qualitative and quantitative methods

This section provides more information about the way organizations combine different methods and information when doing user research.

Many interviewees discussed the challenges of qualitative and quantitative research methods. Table 3 (p. 49) shows the main advantages and disadvantages of user research methods that B2B companies are facing when involving users in product development. It can be seen that the advantages of quantitative methods can balance the disadvantages of qualitative research and the other way around. Qualitative methods are used for getting a

deep understanding of a certain issue. In comparison to surveys and other quantitative methods, interviews and observations enable asking follow-up questions. One more advantage is that qualitative methods usually do not have issues with data security because they are often manual.

The main problem with qualitative methods is that they may take a lot of time and resources (Table 3). As an example, it may take 24 hours to visit customers in northern Finland and talk to six users, according to an experience of SalesAutomation Co. DataScience Co. also mentioned that qualitative research requires many resources. This is what they said about the hours spent for implementing a big user research project when creating a new product: "preparing for an interview, doing the interview, analysing the interview - that takes hours that you cannot cut off and make it shorter. I think for us it was over a thousand hours". In some of the cases getting access to the users, arranging the meetings and analysing results can be time-consuming and manual. In contract to analytics, it is difficult, if not impossible, to automate qualitative research since it is focused on a deep understanding of somebody's thinking. It "has a strong human aspect of discovering the whys and the reasoning behind. I am not sure how you can if you can at all automate that" (DataScience Co.).

Table 3. Advantages and disadvantages of quantitative and qualitative user research

Qualitative methods	Quantitative methods
Challenges	**Challenges**
Hard to organize	Low response rate (surveys)
Take a lot of time and resources	Inaccurate answers (surveys)
Manual approach	Cannot ask follow-up questions
Small sample	Data protection regulations
	Setting up reliable metrics is difficult (analytics)
Advantages	**Advantages**
Follow-up questions	More automatic
Deep answers	Large sample
No issues with data protection	Less time-consuming

Moreover, qualitative methods often gather insights only from a low number of users (Table 3). As a consequence, it may be hard to use the findings, especially if the data is conflicting. "Some might say "it is just what I always needed" and some might say that they cannot use

that" (SalesAutomation Co.). In this case, there is no suitable solution to the problem. In addition, it can be difficult to arrange interviews, observations and similar user research methods since it requires cooperation with various stakeholders. According to SupplyChain Co., it is difficult to "get access to external users without it taking a significant amount of resources" mainly because of the communication with internal stakeholders and users. All this slows down the process of qualitative research and the number of insights that can be gathered and used in product development.

In contrast, quantitative methods can be automated and may gather data from a larger sample, thus providing a broader picture. Especially when compared to qualitative methods, there may be a significant difference in how much time different approaches take: "At this moment we are mostly doing qualitative research because quantitative is running as automatically as possible" (SalesAutomation Co.). On the other hand, the response rate of surveys might be low, and answers may not provide deep enough information. Since surveys do not allow asking follow-up questions, it can be challenging to make conclusions based on the collected data. It may also be hard to set reliable metrics in case of analytics. "We prefer to do questionnaires instead of setting up metrics in the app" (Advertising Co.). Furthermore, there may be some restrictions for sending data to external providers. This may limit the opportunity of using analytics, may require bigger investments or leave a smaller choice of tools. Different methods have several advantages and disadvantages. Strengths and limitations can be balanced when using the methods at a suitable time and combining them.

Other sources of information

In addition to data from qualitative and quantitative user research, development teams aim to collect various information about users from different sources such as customer support, marketing research, data science and the information from customer managers. "You should always think about making your insights multidimensional. Only then user research can be a powerful insight for the company" (CustomerRel Co.). Information gathered by other teams rather than only by development teams and collected from different sources can provide a broader overview of user needs and motivations and increase the validity of the results. "When we have interviews in person, we usually go and see what kind of support cases they had lately to understand what kind of pains they have, what kind of topics there are for the customer to cover" (Advertising Co.). Information from different sources can also be a good foundation for further research. To get deeper insights from qualitative study and

improve the focus of product development, development teams combine the results of user research with the information from other sources. All in all, a good practice is to combine information from various user research methods and insights from different sources to create a better understanding of the users and make informed decisions in product development.

4.4.3 Continuous user research

Frequency goals of user research

One more important issue to consider is how frequently user research takes place in product development. This section explains the targets that different organizations have and their relation to the maturity of organizations.

Table 4 (p. 52) shows how companies arrange user research. It shows how frequently organizations implement user research and whether they have a goal of doing user research continuously. Case companies with a higher maturity level are doing continuous user research, which means that the user research process never stops and is incorporated into product development. Less mature companies are planning to establish a continuous process. They are planning to incorporate it into product development or document it to make sure that more people can take part in the research.

An interesting finding is that some of the companies have targets for user research frequency of qualitative research. SupplyChain Co. aims to meet customers and users each month. SalesAutomation Co. meets the users a few days a month. In more mature organizations, the targets are more frequent, and user research may involve more people. Advertising Co. mentioned that they have a target for the designers and product managers to be in contact with customers at least once a week (Table 4, p. 52).

In contrast, some companies do not have any targets and are doing need-driven user research. They also highlight that their targets and methods strongly depend on the project. Thus, it is impossible to establish a schedule (DataScience Co.). CustomerRel Co. does not have any targets but is doing user research continuously. Frequency of user research does not seem to depend on the maturity of an organization or the size of the UX or research team. It depends on the ways how user research is organized in the company and on personal KPIs of researchers. The most important thing is to make the process continuous and incorporate it into product development.

Table 4. Frequency goals of user research and continuous process

Company	UX maturity	User research frequency	Continuous research & goals
Sievo		"At the moment it is more need-driven."	Would like to involve users in development better and do user research more frequently and on a regular basis
SupplyChain Co.		Aim to meet customers each month	-
SalesAutomation Co.		Meeting customers a few days a month	Would like to have documented processes to make sure anybody in the company can do user research
DataScience Co.		"It is rather ad-hoc. We start to organize research when something is unclear."	-
Advertising Co.		"Every single designer, every single product manager has at least one call or meeting with customers a week."	"We all do as we say continuous user research."
CustomerRel Co.		Weekly research team meetings. Other work depends on the project.	After completing one release, they do generative studies, and a month before the new release, they focus on the evaluative side.

UX maturity: = less mature, = more mature organizations

Incorporated and continuous research

"We all try to be close to customers; we all do as we say continuous user research" (Advertising Co.). In customer-centric organizations, user research is incorporated into product development and is either seen as a key process or not considered as a separate process. "We try to collect all the feedback we ever hear from customers about certain topics and make sure we can access it" (Advertising Co.). Customer-centric companies are constantly collecting information about customers and using it in product development or as a starting point for further research. They collect this information on all phases of the service design process, such as the discovery of ideas and user testing. Another example is that CustomerRel Co. is doing generative studies after the release is complete and is focusing on evaluative studies closer to the time of the new release (Table 4). Generative research helps to understand user needs and decide what to develop next. Evaluative research assesses the new solutions and evaluates how well they meet the needs.

Less mature organizations do not have an incorporated and continuous user research process, but most of them admit that continuous user research is necessary. SalesAutomation Co. learned from previous experience that they "cannot skip research" and should start exploring different use cases already before developing a new feature. Sievo argues that the only way to improve user experience is to make sure that user research happens all the time and is incorporated into the development process. The benefit of incorporated research is that "you can do much more with the same resources since there is no need to reinvent the process every time" (Sievo). If the research is done continuously, a company can benefit from better and more complete information about the users. Thus, the result of user research is not only dependent on the methods companies choose but also on the ways they incorporate user involvement into the company. The goal of Sievo and companies with a similar maturity level is to fit user involvement into product development so that "it comes at the right time to the right people with the right answers".

4.5 Who should take part in user research?

4.5.1 Who does user research and who supports user involvement?

The literature review concludes that establishing a suitable culture inside the organization is important for becoming customer-centric. Such a culture should facilitate user involvement in product development and ensure that stakeholders understand its importance. This section investigates who supports user research in the case companies, who is involved in user research and identifies internal stakeholders who should take part in user research.

Table 5 (p. 54) shows how the organization in the case companies supports user involvement and who is involved in the main process. All companies admitted that management and product development teams find user involvement important. The main difference between more mature and less mature organizations is the time when the management and development teams started taking active steps towards customer-centric product development. Less mature organizations have started involving users in development only recently, and that creates certain challenges. As it was mentioned by DataScience Co., it took two years to see if user involvement helped them to start solving the right problem. Even though management is convinced that user involvement is important, it may take a long time to see results. If they do not understand how valuable user involvement is compared to the costs, they might be hesitant to invest more resources in user

involvement. DataScience Co. and SupplyChain Co. do not have analytics tools because they require a big investment and have not been prioritized. In contrast, companies with more established user involvement may be more convinced that user research is beneficial and might support it more. As an example, they may invest more resources in meeting customers. “It is not uncommon for us to fly to Berlin for one day and have four meetings with four different customers and fly back to Helsinki” (Advertising Co.).

Table 5. Does the organization support user research and who is involved?

Company	UX maturity	Does the organization support user involvement?	Who does user research?
Sievo		Product development understands that “user engagement and really listening and getting feedback along the whole development process is super important.”	UX designer, product managers
SupplyChain Co.		The organization supports user involvement	Design team, product and service managers
SalesAutomation Co.		Management finds user research important	UX designer
DataScience Co.		Management agrees that they should know user needs and tasks	UX designer
Advertising Co.		“From the very beginning, every single person from the team worked closely with the customers.”	Product designers, customer managers and product managers “Every single person in the company, including the lawyers, CEO and designers do customer support.”
CustomerRel Co.		The case company is user-centric. “Before we start doing anything, we involve user researchers.”	Research team May take part: product teams, product managers, designers, engineers and others

UX maturity: = less mature, = more mature

Table 5 shows who does user research in different organizations. In most of the organizations, user research is implemented by a designer or a design team. In organizations with a larger number of employees such as CustomerRel Co., strategic user research is done by a dedicated team of researchers rather than by UX, service or product designers. Customer-centric organizations tend to involve more stakeholders in user research during all

times of product development. They may also have a better understanding of who should be included and more established practices of involving stakeholders to user research. Advertising Co. always invites a customer manager and a product manager to meetings with the users. In addition, all employees in Advertising Co. are expected to understand user pain points and needs. They are all interacting with the users, regardless of the role since all of them take part in customer support. CustomerRel Co. as well encourages internal stakeholders from various backgrounds to take part in interviews and observations. In contrast, in less mature organizations, fewer people are involved in user research. In some organizations, UX designers are responsible for the whole process of user research. They may not include many other stakeholders to the process of data collections and analysis of results (DataScience Co., SalesAutomation Co.). In other organizations, product managers and customer or service managers may be involved in the process of data collection and analysis but not regularly (SupplyChain Co., Sievo).

4.5.2 Sharing user research results

Another issue that is related to the involvement of stakeholders in user research is the process of sharing results. In this case, maturity can be an important factor. One more factor that affects how results are shared is the number of employees in an organization. Table 6 (p. 56) shows how case companies stare results with stakeholders. It also shows the range of employees that case companies have. SalesAutomation Co. has a low number of employees of around 20 people and three companies have more than 250 employees and belong to large organizations. This scale is based on the definition of small and medium enterprises. According to it, small organizations have less than 50 employees, and medium organizations have less than 250 employees (Statistics Finland, 2019).

More mature organizations tend to share results with a broader audience, such as the whole company or the whole development team. As an example, CustomerRel Co., that has a large number of employees is building a central place where anybody in the company will be able to find the results of user research. In Advertising Co., all the information gathered about customers is stored in an accessible place. In less mature organizations, results are usually shared with a smaller audience, such as management and development teams (Table 6, p. 56). The broader audience may not have access to the results.

Table 6. Sharing user research results: with whom and how?

Company	Number of employees	Sharing results: With whom?	Sharing results: What and How?
Sievo	MEDIUM	Development team, other stakeholders and customers Sometimes: the whole company	Documentation, presentation of findings
SupplyChain Co.	LARGE	Development team, customer managers	Sharing insights via different tools
SalesAutomation Co.	LOW	Management	Showing user stories and summaries of ideas on weekly meetings
DataScience Co.	MEDIUM	Product owners and management	Presentation of findings
Advertising Co.	LARGE	Entire company, engineers and product managers	Taking notes at each customer meeting and sharing them with everyone in a team collaboration app
CustomerRel Co.	LARGE	Development team Sometimes: sending results to a broader audience	Interview summaries, result meetings

Number of employees: Low = less than 50, Medium = 50-250, Large = more than 250

One more difference is the frequency of sharing results. Mature organizations tend to share results frequently. Interviewed case companies, for example, share results after each meeting. In other organizations, the process may be slower. They may wait until the point when results are more finalized and share them only closer to the end of a study or after several interviews. The process may be faster in organizations with a lower number of employees and a smaller audience who are expecting results. Furthermore, the way companies share results is similar. Most of the designers and researchers are preparing summaries of the research and presenting the results to management and development teams. Advertising Co. shares results in a team collaboration app (Table 6). Since all employees are in some way related to user research because of customer support, this might be the easiest and fastest way to share results frequently and with a wider audience.

Several challenges related to the involvement of shareholders and sharing results were identified by the case companies. Large and mature organizations, such as CustomerRel Co. are looking for better ways to educate research partners that are not specialized in user research. That can enable them to involve more stakeholders in user research. The quality of results may vary depending on the experience level of a person who is doing user research. By educating the partners, they can get a better quality of results. DigitalConsulting Co. that has done projects with various organizations emphasized several times during the interview

that there is a risk of doing user research without any experience and getting misleading results. According to them, it is necessary to have more experienced people arranging user research and let the other stakeholders learn from them.

Moreover, sharing results with a broader audience and making sure the results are understood can be difficult. Even when the results are communicated clearly and in an actionable format, some issues that are *"*lost in translation*"* may remain (Advertising Co.). In other words, some details may not be understood by those who did not take part in the research, especially in a large organization. Service design companies suggest using video as a communication material since that can increase understanding of the discussed issues (DigitalConsulting Co., 2019). Similarly, Stickdorn et al. (2018) recommend using quotes, photos and videos when sharing results of user research with stakeholders to make the results more convincing and actionable.

It is also challenging to turn gathered insights into action. SupplyChain Co. is developing a process that would allow taking active steps in turning the insights from customer feedback into actions by, for example, creating customer support tickets after each meeting. They are also adding more abstract insights to different tools used for sharing ideas since they might become useful later on. Similarly, SalesAutomation Co. is creating customer support tickets to make the findings more actionable. Making changes based on user research results and using this data for prioritizing tasks in product development rather than just sharing the insights is an important and necessary stage that can influence the overall success of user research. ”Just like building a house should not end with a plan, a service design should not end with ideas on paper” Stickdorn et al. (2018, p. 33).

4.5.3 Involving stakeholders to user research

> *I think the best practice is to do something, something that helps to understand the user's work. It is not a particular method or a particular process. The main point is that [user centricity] has to be baked in company DNA and how they do things [not as something that is done] on top or on the side. It has to be the starting point. (Sievo)*

Based on the experience of customer-centric organizations, it is important to make user involvement a starting point of product development and involve relevant internal stakeholders to this process. Stakeholders should be involved from the beginning of product

development. This will ensure that the reasoning behind the solutions is transparent for them (ServiceDesign Co.). “User involvement cannot be an external process” that distributes the result to the development team (Sievo) because then they will not understand the users and may not accept the ideas. Especially in less mature organizations, the department may not be ready to believe in what users say (DigitalConsulting Co.). Yet, if stakeholders are included in the user research process from the beginning, they may be more willing to believe users and accept the results. Therefore, the best practice is to engage internal stakeholders in user research from the beginning of product development.

Moreover, one of the common approaches is that a group of people such as designers, user researchers and product managers is doing more strategic research. It is better if people with more experience initiate the research to avoid biased results. It is “easy to do interviews, but it is hard to get good results and use the tools in the right way” (DigitalConsulting Co.). Organizations that do user research without having enough experience or companies that start involving users just because it is the way things should be done, often fail in getting good results. Also, ServiceDesign Co. said that less mature organizations tend to do mainly quantitative surveys, since good quality qualitative research requires more experience. Experience is required to avoid such situations as jumping to conclusions too early, not being objective, doing too little research or confirming own biases. Thus, it is a good practice to have more experienced people leading user research in an organization.

That does not mean that others should not be involved. As discussed previously, all relevant stakeholders such as development teams and, for example, teams that are working with customers shall be interested in learning about the users, their needs and pain points. In customer-centric organizations such as Advertising Co. and CustomerRel Co., customer-facing opportunities are not restricted to customer management and sales teams but are also provided for developers and other teams that are originally not customer-facing. This creates empathy towards users and in the best-case scenario results in a product that meets customer needs. Participation can be arranged by inviting relevant stakeholders such as development teams to user interviews and tests as well as frequently sharing results in an actionable and clear format. In addition, it can be beneficial to involve people from different backgrounds to the analysis phase since that can create rich discussions and provide various interpretations of results (ServiceDesign Co.). This may lead to better conclusions and more clear understanding of users.

Clear communication practices can make it easier to keep relevant stakeholders up-to-date. This can be achieved by creating channels for sharing feedback such as customer support tickets and other tools used for prioritizing the work. Channels can improve the process of sharing feedback with relevant stakeholders as well as accessing the information. It can be a good idea to create rules that everybody has to follow to make the process of user research easier to understand and take part in. Such rules can save time since stakeholders would not have to reinvent the process all the time and would know which steps to follow and when. "We do have some rules. Let's say, every customer meeting should have notes, notes should come in a certain way. There is a checklist of what you are expected to check before going to customer interview"(Advertising Co.). In an organization with the bigger development team, it is important to ensure that everyone understands the problem in the same way. Before starting user research, it is necessary to align with the team members what is expected and what kind of results the team is looking for (CustomerRel Co.).

4.6 Selecting user research participants

Another party of important stakeholders are users themselves. The main question is how to select the users that will bring valuable insights. One more question is how to motivate the users to take part in product development and increase selection opportunities.

4.6.1 User selection strategies

Based on the findings from the literature, the selection of the right users is an important part of successful user involvement (Bano & Zowghi, 2015) and is especially important for minimizing different biases and sample errors (Stickdorn et al., 2018). However, B2B companies might face several challenges that limit the choice of the users that can be involved in product development (Rissanen & Münch, 2015).

In comparison to the B2C field, B2B companies may have a lower number of users. The low number of users can be both a positive and a negative issue in terms of user selection. In some cases, it leads to the situation when a company cannot be selective when choosing user research participants (CustomerRel Co.). In other cases, the low number of users can be an advantage. In Advertising Co., the number of users is low. However, product development is happening in close cooperation with the users because of the nature of the business. Because of the low number of users, the company can meet the needs of a bigger

group of users by involving them in user research. Some companies may have difficulties in accessing users because of the geographical distance and organizational structure. For less mature organizations, it may also be more challenging to access users since the users do not have a habit of taking part in product development. Therefore, depending on different factors, companies can have a certain choice of users who may be involved in product development. Some organizations may have more choices than others. Table 7 summarizes the main findings of user selections and shows how case companies select the users, how motivated the users are, and how the case companies motivate them to take part in product development.

Table 7. Selection of users and their motivation

Company	Number of users	Selecting users	Are users motivated to give feedback?	How do you motivate the users?
Sievo	MEDIUM	Do not select exact users but make sure there are enough opinions	Very motivated if you choose the correct time and method	"Biggest motivation is if they see that feedback matters."
SupplyChain Co.	LOW	Internal users: different roles and experience External: any users	Users are happy to give feedback, but it is necessary to convince stakeholders that feedback is needed	Show that they are acting on the feedback
SalesAutomation Co.	MEDIUM	Biggest customers; those who use specific features or have different roles	"When we ask them to participate in a study or a questionnaire, almost always they say that it is perfectly fine."	Send small gifts (but do not tell about it beforehand)
DataScience Co.	MEDIUM	Somebody who knows how to use the tool or uses it for certain tasks	"They were motivated to join, and later on we got a feedback that they were really happy about it".	Create a friendly environment
Advertising Co.	LOW	Customers who bring more value & based on agenda or project	"Usually, the value of those meetings is quite apparent both to the customers, to us and to customer managers."	Make meetings valuable for the users
CustomerRel Co.	LOW	The mix of different users; Not very selective because of the low number of users	"They are really passionate about improving the communities, very mission-driven."	Select users to an advisory board Not allowed to provide gifts for non-profit organisations

Number of users: Low = less than 5.000 users, Medium = more than 5.000 users

As shown in Table 7 (p. 60), when selecting the users most of the case companies are paying attention to similar issues and selecting customers that bring more value, users from different roles or the ones that use certain features. The main idea is as Sievo said to "get enough opinions" to avoid biased results. Service design companies support the idea of involving different types of users and the users that are using the product a lot (ServiceDesign Co.). They say that it is important to avoid selecting a homogenous group of people that have a certain attitude towards the product, such as a group of people that is too positive about the service (DigitalConsulting Co.). To address the challenge of a low number of users in the B2B context, they are sometimes using external sources of information such as research done by other companies or opinions of people working in the same area.

On the other hand, some of the case companies are not selecting users very carefully (Table 7, p. 60) mainly because it is difficult to access them (SupplyChain Co., CustomerRel Co., Sievo). Regardless of that, case companies are getting valuable results when doing user research. This contradicts to the literature that is claiming that the selection of the right users is necessary for successful user involvement.

4.6.2 Getting access to users

Another important side of user selection is the motivation of the users to spend time on product development. B2B companies, in comparison to B2C, may have a stronger connection between the user and a service provider. According to service design companies, in the B2B context, users are often happy to help but might not have much time (ServiceDesign Co.). In all interviewed case companies, the users are very motivated to give feedback since they use the product a lot. The efficiency and quality of their work depends on the software that case companies provide. Thus, the users are motivated to improve it. However, even though the users themselves are willing to give feedback, some case companies are facing challenges in recruiting the users.

Development teams in less mature organizations can be separated from the users. SupplyChain Co. admitted that there are many people between the design team and users both in the case company itself and on the customer side. To get access to the users, user researchers need to explain the value of user involvement to all stakeholders. "You need to explain why it is useful for them, why they need to participate and how we are going to use the results" (SupplyChain Co.). Since in less mature organizations the value may not yet be clear to all stakeholders, qualitative research can create additional challenges for the design

team and require a lot of work and resources. That confirms the difficulties of user selection and the need for motivating not only the users but other stakeholders that are separating the development team and the users.

Furthermore, in most cases, development teams and UX and product designers do not have direct contact with customers and the users since they are not a part of the customer-facing organization. Often, mainly sales teams and customer managers are interacting with the customers directly (Figure 9).

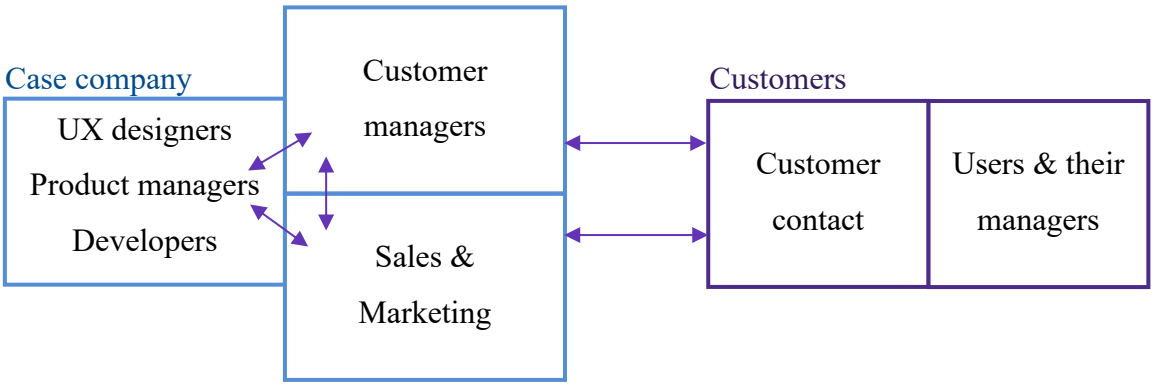

Figure 9. Organizational structure and contact with the users

To organize interviews, observations and other user studies, user researchers in all of the case companies, except for CustomerRel Co., contact internal stakeholders that are working with the customers. Such stakeholders are customer managers, account managers, marketing and sales. This creates both advantages and challenges. On the one hand, since those stakeholders are most likely meeting customers regularly, it is easier for the members of the development team and for UX and product designers to join their meetings. This is especially good for companies that are starting to involve customers in the development and would like to save time on arranging the meetings. On the other hand, such organizational structure creates communication barriers. If the UX team cannot access users directly, they often cannot choose the participants of the research and should rely on other stakeholders, especially when arranging qualitative research studies. Moreover, customer organization may have additional stakeholders that separate customer managers from the users. In Figure 9, such stakeholders are referred to as customer contact.

Moreover, in such global companies as selected case companies, users are located all over the world, and they are also busy with their tasks. Even if they are motivated to help to

improve the product they are using, they might not have enough time. Therefore, companies that are trying to approach them might experience a variation in the response rate both in quantitative and qualitative studies such as interviews and surveys. For example, Sievo has noticed that the users are eager to give feedback if the company is approaching them with the right research method and at the right time. “If you try to catch them at the wrong point, they just will not answer” (Sievo). Same as for other companies such as SupplyChain Co., the most time-consuming part in the process is approaching the users. This phase may require a lot of effort and may involve many other stakeholders, thus taking more time. “Once you get to the point when you actually can talk to them, they really want to give you feedback” (Sievo). As soon as the meeting is scheduled, and there is an opportunity to talk to the user, the process becomes less challenging. In contrast, SalesAutomation Co. said that they have a response rate of 80% when they approach customers with the surveys or ask them to take part in the interview or observation. DataScience Co. and Advertising Co. also do not experience any issues in approaching the users. CustomerRel Co. mentioned that data protection regulations are a big challenge since they cannot contact anybody who is using the product without permission to contact them. This also limits their choice and the number of possible participants. Thus, based on case company answers, the users are motivated to give feedback but the most difficult part, especially for less mature organizations or the ones with a low number of users, is approaching the users.

As mentioned, users tend to be interested in improving the product if they are using it often. What else motivates them to take part in product development? Also, here, answers varied to some extent. Sievo and SupplyChain Co. answered that the biggest motivation is the changes they make in the product based on the feedback. This can be relevant for all other companies. SalesAutomation Co. is sending small gifts. They noted that they are not informing the users about the gifts beforehand since it should not be the main motivation but rather a small complement for their help. CustomerRel Co. is giving gifts to research participants when doing user research in most of the product lines. However, they are not allowed to provide any gifts in the product line of non-profit organizations. At the same time, users working in educational institutions or other non-profit organizations are passionate about improving communities. CustomerRel Co. selects the users to an advisory board. The status of being in the board motivates them to take part in product development. Furthermore, DataScience Co. mentioned that it is important to create a friendly environment, especially during brainstorming sessions, interviews and similar activities.

That can encourage the users to give more feedback and may motivate them to take part in the research in the future.

Advertising Co. has a different view of this issue. Their approach can be typical to customer-centric organizations with a low number of users. They said that the users "enjoy the meetings and find value in the meetings". The reason for that is that instead of only asking for feedback, they also try to make meetings valuable for the users by showing them new features or anything else that may create additional value. This approach differs from others because the company is aiming to create value for the users already during the meeting. That makes the value of such feedback sessions clear to all stakeholders. This approach is suitable for complex products since there is always a lot to learn about them. That also works in case of frequent meetings with the users since there may be less time pressure in comparison to the meetings that happen rarely. In other possible interview scenarios, the value may not be visible to users immediately. It can only be recognized when changes are made in the product. Since it may take much time or may not happen at all, users and their managers may be more hesitant to dedicate their time to user research.

4.7 Discussion

This section summarizes and discusses the main results of the thesis. It starts with findings related to the user research process and the participation of various stakeholders. Then, it discusses the findings associated with the selection of user research methods.

4.7.1 User research process and stakeholders

Previous sections compared how user research is arranged in more customer-centric or more mature versus less mature organizations that aim to become customer-centric. This division is based on UX maturity model presented in the literature review (p. 13). Such comparison helps to identify best practices, challenges and opportunities of user research in product development. One of the most significant findings relates to the value of user involvement in organizations of different maturity. While ad-hoc user research can change organizational culture, incorporated user involvement can help achieve a higher return on investment (ROI).

Less mature organizations involve users in product development on an ad-hoc basis (Table 8, p. 65). User research often starts when a company identifies a topic that needs to be investigated (SalesAutomation Co., SupplyChain Co., Sievo). In less mature

organizations user research does not happen regularly during product development and may involve only a low number of stakeholders. Several authors discuss the disadvantages of ad-hoc user involvement (Bosch-Sijtsema & Bosch, 2015; Sauvola et al., 2015; Maalej et al., 2009). They claim that in less customer-centric organizations user research is often done occasionally or on specific stages of product development. They emphasize the importance of involving users continuously and starting from the initial stages of product development (Bias & Mayhew, 2005) to create a product that meets customer needs. Literature mainly focuses on the disadvantages of ad-hoc user involvement and rarely discusses its advantages.

Table 8. User research process in mature and less mature organizations

	Less mature organizations	Mature organizations
User research process	**Ad-hoc user research that is not incorporated into the company**: The process is less established and may require more resources. Ad-hoc user research can change organizational culture.	**Continuous user research that is incorporated into the company:** The process is more established and can be more efficient. Incorporated user involvement can help achieve higher ROI.
Stakeholders	**Fewer people are involved in user research:** Management understands the value of user involvement. Stakeholders understand separate use cases. A narrow audience can use results.	**More people are involved in user research:** Management is committed to customer-centric product development. Stakeholders understand user needs. A broad audience can use results.

Nevertheless, less mature case companies with a less established user research process consider user involvement valuable. It helps them understand what users want to achieve, validate assumptions and build the product based on data. None of the interviewed companies measures the value of user research systematically. Regardless of that, all organizations, including less mature organizations, have noticed a positive impact of user research. As an example, DataScience Co. improved its product and increased sales by solving the right problems. Thus, even when user research does not happen regularly and is not systematic, it can bring value to an organization.

Ad-hoc user research is especially useful for introducing customer-centric product development into the company and convincing stakeholders that user research matters. It is an essential step towards customer-centricity since it may change organizational culture. Design artefacts such as videos, personas and customer journey maps can develop empathy towards users and establish a customer-centric way of working (Wechsler & Schweitzer, 2019; Elsbach & Stigliani, 2018). Information about the users gathered during user research may decrease guessing and help development teams focus on important features. Successful user involvement may motivate stakeholders to start from the users each time they are developing something new. User involvement that results in increased user satisfaction, better sales and retention rate can convince the management that user research plays an important role in product development.

On the other hand, ad-hoc user research has several disadvantages. Some case companies mentioned that they have to reinvent the process of user research every time (Sievo, SupplyChain Co.). Creation of the new process requires more resources, especially for organizing qualitative research. Companies also experience difficulties in using results and making them valuable for product development. This may happen because fewer people are involved in user research and can use the results. It can also occur because of the lack of clear practices of how the company should use user research results in product development (Table 8, p. 65). Because of the mentioned difficulties and the high cost of user research, less mature companies may have a smaller return on investment when involving users in product development (Lee et al., 2014).

In contrast, more mature organizations may experience fewer issues with the lack of resources and the user research process overall. Since the process of user involvement is more established, it may be less time-consuming and resource-intensive. It may be clearer how to involve users in product development, how to share the results with the stakeholders and how to use the insights in product development. In addition, because customer-centric companies do user research continuously, they tend to have a better understanding of the users. In comparison to less mature organizations, they do not only collect information about separate use cases. They aim to collect all information about the users and store it in an accessible place (Advertising Co., CustomerRel Co.). It may increase the validity of results and the accuracy of product requirements. More complete information about the users may serve as a better foundation for qualitative research.

It can be argued that ad-hoc user involvement is valuable since it can change organizational culture, the attitude of stakeholders and make product development more customer-centric. However, to achieve a higher return on investment, it is necessary to incorporate user research into the ways of working of an organization and make the process of user research continuous. That means that management should be committed to customer-centric product development, and user research should always be a part of the development process. In addition, more stakeholders should be involved in user research. It should become a responsibility of a bigger group of people rather than only the responsibility of a design team.

4.7.2 User research methods

The user research methodology consists of different approaches that can be used to gather various types and amounts of data. Some authors claim that each method has its purpose and fits best to specific stages of product development (Bosch-Sijtsema & Bosch, 2015; Travis & Hodgson, 2019). The case company interviews revealed that it does not matter which methods companies choose and in what stage of the development they use them as long as the methods bring valuable insights and support customer-centric product development.

In the interviewed companies, UX, product designers, business designers and user researchers arrange user research. Experience in user research helps them overcome challenges and decrease biases by asking the right questions and choosing the right focus. For that reason, most of the interviewees do not consider the selection of methods difficult. “If you know your methods, that is the only thing you can rely on, everything else changes” (DataScience Co.) According to DataScience Co., user research methods are the only thing that does not change. Those who know well how to use various methods can get valuable results. According to SalesAutomation Co., “instead of waiting for you to come up with the best questions, you should try to open up the dialogue with the users as fast as possible.” Once again, it does not matter which methods a company chooses. Instead, it is crucial to connect with users as soon as possible. SalesAutomation Co. suggests avoiding “doing everything the right way” if it is going to be expensive or slow and take a long time. Advertising Co. also admits, “we do not even have to be that careful in what kind of methods we use.” They also say that it is important to talk to customers often, but it does not matter which method is used for that. Finally, Sievo states that “is not a particular method or a particular process. It is a matter of customer-centricity”. This confirms the idea of opening

a dialogue with users and being customer-centric rather than spending the time on planning user research very well and choosing correct methods.

On the other hand, some approaches can help companies become more customer-centric. One of the main findings of the study is that qualitative user research methods are essential for customer-centric product development. All interviewed B2B SaaS organizations that aim to be customer-centric are mainly relying on qualitative user research (Table 9). Companies that started doing user research recently, increased the amount of qualitative research. According to the interviewees, qualitative methods provide an opportunity for understanding users better, getting more in-depth information about their needs and uncovering a root cause to a problem (Sievo, SalesAutomation Co., ServiceDesign Co., DigitalConsulting Co.). Even though qualitative methods are time-consuming and resource-intensive, all case companies considered qualitative research valuable.

Table 9. User research methods in mature and less mature organizations

<table>
<tr><th></th><th>Less mature organizations</th><th>Mature organizations</th></tr>
<tr><td rowspan="2">User research methods</td><td>Organizations that aim to become customer-centric increase the amount of qualitative research.</td><td>Customer-centric companies focus on qualitative user research. It provides deep insights about users.</td></tr>
<tr><td colspan="2">Quantitative research and other data, such as information from customer support, are used as a starting point for qualitative research.

Even though the software field provides a good opportunity for usage analytics, most of the case companies do not have analytics tools.</td></tr>
</table>

Most of the interviewed companies do not focus on quantitative research, and only a few of the case companies have user behaviour analytics tools. That contradicts with the literature that often mentions that software companies have favourable conditions for usage analytics (Lindgren & Münch, 2016). Case companies are using data from quantitative research and other sources of information to find the right focus for qualitative studies (Sievo, Advertising Co., ServiceDesign Co., DigitalConsulting Co.) (Table 9). In contrast, many authors consider quantitative research more suitable for later stages of product development (Olsson & Bosch, 2015; Fabijan et al., 2015) when the product or feature is already released. Furthermore, quantitative data cannot explain the reason for the identified problem and can

be more valuable when combined with qualitative methods. Similarly, it was concluded in the literature review that it is necessary to combine different research methods (Olsson & Bosch 2015; Stickdorn et al., 2018). However, it was not clear which methods are the most valuable for customer-centric B2B SaaS organizations and how they can help companies to generate useful insights.

During the interviews with the case companies, it was discovered that while the choice of specific methods does not matter, qualitative user research is essential for B2B SaaS organizations and is necessary for customer-centric product development. Quantitative methods alone cannot provide enough information for understanding the users well and should be combined with qualitative to make product development more customer-centric. Both quantitative data and data gathered from other sources of information are often used to find the right focus for qualitative research and improve its outcome.

5 Conclusion

This chapter summarizes the results of the study. It starts by restating the importance of the topic and the purpose of the research. Then it provides answers to the research questions and explains the theoretical contribution and managerial implications of the study. Finally, it discusses the limitations of the study and provides suggestions for further research.

To start with, B2B SaaS companies are facing a challenge. Expectations of existing and potential customers and users of B2B SaaS products are rising. Companies have to rethink how they create the products. They aim to become customer-centric to improve user experience and stay competitive. To understand users better and meet their expectations, customer-centric organizations do user research and involve users in product development. Even though many organizations have recognized the value of user experience, most of the companies cannot yet be considered truly customer-centric. This thesis uses a multiple case study method to explore how B2B SaaS companies can utilize user research in product development. Research questions aim to find answers for some of the most fundamental issues of getting valuable insights from user research methods, involving internal stakeholders to user research and selecting the users.

5.1 Theoretical contributions

The thesis brings new insights about user research in B2B SaaS organizations to the theory. It compares how user research is arranged in mature or customer-centric and less mature or less customer-centric organizations and shows successful cases of user involvement. It discusses the challenges that case companies are facing when involving users in product development as well as user research opportunities that emerge in the B2B field. Moreover, the research emphasizes the importance of customer-centric product development and user involvement. It highlights the value of ad-hoc user research, the need for incorporated user involvement and participation of various stakeholders. The study discovers that qualitative research is essential for customer-centric product development. It also uncovers the difficulty of accessing the users in the B2B field.

It was discovered that user involvement and customer-centric product development are considered valuable in both literature and the case companies. User research is essential for customer-centric product development since it helps understand customer needs, move beyond assumptions and reduce the risk of developing the wrong product. Companies involve users in product development to focus on relevant problems and justify design decisions. They aim to create a product that customers need and want to use to gain a competitive advantage and improve financial performance.

User research in more mature and less mature organizations was compared in the study. It was discovered that less mature organizations are doing ad-hoc user research, while more mature organizations incorporate user research into product development. Literature is mainly discussing the disadvantages of ad-hoc user research. However, based on the experience of the case companies, it can be concluded that ad-hoc user research is valuable. Ad-hoc user research can bring useful insights into product development and can promote the benefits of user involvement in the company. Furthermore, companies that have incorporated user involvement in the development process can achieve a higher return on investment by improving the efficiency of the process and involving more stakeholders to user research. Incorporated user involvement is the next important step in customer-centric product development after ad-hoc user research.

Furthermore, it was discovered that less mature organizations involve fewer stakeholders in user research. In contrast, more mature organizations tend to include a larger number of stakeholders, such as the members of development teams and the whole organization. The involvement of stakeholders increases the empathy towards users, makes

the results of user research transparent and encourages development teams to create products that fit customer needs. Both case study and literature agree that the involvement of a larger number of stakeholders is essential for customer-centric product development. Ad-hoc user research can help companies introduce the benefits of user involvement to relevant stakeholders and encourage them to take part in user research to have a better understanding of the users and be able to utilize the results of user research.

Another focus of the study was on the data collection process. The literature often claims that different methods should be used on certain stages of product development and classifies them based on the size and type of data that they are collecting. Case companies, however, pay less attention to the selection of methods and no specific methods that are suitable for B2B SaaS companies were identified. However, case company interviews provided additional insights into the importance of qualitative research. It was discovered that qualitative methods are essential for customer-centric product development. Qualitative research can help companies get a deep understanding of the needs and motivations of the users. Better results can be achieved when combining qualitative research with information about the users gathered from different sources and teams and quantitative data.

Furthermore, the process of user selection was explored. The literature states that the selection of the right users is important. Case companies, however, do not have established user selection strategies but often try to select different types of users and hear several opinions when doing user research. They aim to gather information about different use cases to develop a product that meets the expectations of a variety of users rather than a small group of people. Even though B2B users tend to be motivated to take part in product development, it can be challenging to approach them. It was discovered that the process of accessing the users can be the most a time-consuming and challenging part of user selection and data collection processes in B2B organizations. The problem may arise because of the low number of users and data protection regulations. Other challenges of accessing the users can be related to the distant location of the users, limited resources and the lack of a direct link between development teams and the users.

5.2 Managerial implications

This section provides recommendations to B2B SaaS companies that aim to become customer-centric. It was discovered that each case company has its own approach to user

research. The user research process depends on the context of the company and may vary across organizations. It is important to mention that since each company has a different background, some of the recommendations provided in this thesis may not be relevant to all organizations.

Both literature and the case company interviews showed that only a minority of organizations can be considered customer-centric. At the same time, it was discovered that good user experience is important. To stay competitive, create products that matter and encourage customers to purchase and use the products, it is necessary to be customer-centric and do user research. B2B SaaS companies have a big opportunity for gaining a competitive advantage by changing the ways of working and the attitude towards user engagement, involving users in product development and becoming customer-centric.

Less mature organizations may start involving users in product development by doing user research on an ad-hoc basis. As it was revealed, a careful choice of methods and thorough planning of user research may not be a suitable strategy. Instead, it is essential to choose any method and open a dialogue with the users as soon as possible to increase an understanding of their needs. Another goal of ad-hoc research is to show the benefits of user research to internal stakeholders and raise awareness of the importance of user involvement.

Furthermore, user involvement can bring more value to the company and a better return on investment if it is incorporated into product development, happens continuously and is not considered as a separate process. Incorporated user involvement is the next step after ad-hoc user research. It can be achieved by placing design at the heart of an organization, establishing a customer-centric culture, creating suitable processes and communication channels and involving relevant stakeholders such as development teams, product managers and the whole organization to user research.

Furthermore, the SaaS business model provides good opportunities for gathering quantitative data and understanding which features are important for the users and what problems users are facing when using a product. Nevertheless, qualitative user research is essential for customer-centric product development. The result of user research can be improved by using a mix of user research methods and gathering information about users from different sources and all customer-facing parts of the organization.

To sum up, user research can be more valuable for an organization if it is incorporated into product development, happens continuously and relies on a mix of user research methods that include qualitative studies. Results can be utilized better if relevant internal

stakeholders take part in user research. Ad-hoc user research can be a good start for establishing new processes, changing ways of working and incorporating user research into product development.

5.3 Limitations

The limitations of the thesis are mainly related to the methods that were used to collect the data. The multiple case study approach selected for this thesis helped to identify common views of B2B SaaS companies and service design companies related to the research questions. It gathered a number of answers from different organizations. While the variety of cases increased the validity of results, the study does not provide enough evidence to generalise the results. On the other hand, the goal of the research was not to generalise the findings but rather to achieve an in-depth understanding of real-life events.

Furthermore, it can be argued that findings strongly depend on the context of case companies. Each company creates a user research strategy that is suitable to its environment. More detailed findings may not be applicable to other B2B SaaS companies because of the difference in a company context. This issue can be solved by selecting companies with a similar background for further research.

Another limitation is concerning the quality of data that was gathered during interviews. In contrast to observations, interviews may provide unreliable information. Interviews depend on the ability of the interviewee to recall the events that happened in the past and give accurate answers. Possibly, some of the information was not communicated clearly, or some issues were not understood by the interviewer because of the lack of explanation. Because of the limitations in time and the broad scope of the research, it was impossible to ask many follow up questions to understand the answers better. Some data can be, therefore, incomplete or not studied on a very detailed level.

Finally, since interviews were the main method of gathering data, the research is missing data triangulation. Additional research methods, such as observations or quantitative data, could have increased the validity of the results. Furthermore, interviews were only conducted with designers and user researchers. The validity of the results can be increased by interviewing groups of people that have a different role in user research. Interviews with developers, product managers and users can improve the understanding of the topic.

5.4 Further research

Several additional topics can be studied in the future to get a better understanding of how user research can be utilized in software companies. One of the areas that can be investigated is how artificial intelligence and machine learning can be applied to user research. Currently, user research can be time-consuming and may require many resources. Artificial intelligence (AI) and machine learning (ML) can be used to solve some of the challenges that companies are facing and make the results of user research more valuable and actionable. As an example, AI can reveal key issues that have the most significant impact on user experience in large amounts of data (ServiceDesign Co.). It can help to analyse data from different systems and provide suggestions and ideas on how the product can be improved. In addition, AI can simulate user situations by creating digitalised users, thus increasing the speed of user research. AI can also be applied to user research in many other ways, such as emotion recognition in qualitative research (DigitalConsulting Co.). Further research can focus on solving the challenges of user involvement and improving the efficiency of different methods and approaches of user research through automation. Less time-consuming and more data-driven user research may encourage organizations to involve users in product development continuously.

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Appendix 1: Interview template

Introduction

– Personal introductions

– Background of the research

– Confidentiality

– Permission to record the interview

User research strategy

– Why does user research matter? What do you want to achieve when doing user research?

– Who does user research in your company and who is involved in the process?

– Does the organization find user research important?

– How many customers and users do you have (approximately)?

User research methods

– Which methods do you use? (quantitative and qualitative)

– How does company context influence the choice of methods?

– Do you do remote user research and how?

– What do you do daily, weekly and monthly? (frequency of research)

– Who do you share the results with and how?

– What works well in the current process?

– What is the biggest problem in your current approach?

Users and motivation

– How do you motivate users to give feedback?

– How do you select users for user research?

Best practices and future opportunities

– What are the best practices of user research?

– In your opinion, what are the most interesting future opportunities in user research?

Final questions

– Do you think I missed something that would be important to consider?